BITTEN BY THE BUG DENNIS KEELING AND THE CNC ROUTER

The No.1 magazine for aspiring designer makers

Issue 303

THE HOME OF WOODWORKING www.getwoodworking.com

'There are no secrets or short cuts to producing fine furniture - just patience, practice & precision'

ANDY KING'S TOP KIT ON TEST!

AWARD-WINNING MAKER

Veteran woodworking artist Les Lively's amazing

heirloom-quality furniture



FUNCTION FIRST

SCULPTURAL TURNING OF MARK HANCOCK

UKU CAN DO IT

Make a tenor ukulele from scratch with Shaun Newman



PLUS...

- Around the House: Make your own handy try square
- Les Thorne's favourite things
- Edward Hopkins gets to grips with engineered board

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Velcome

I know I say this every month, but I like to think that this issue has something for everyone: it's musical, inspirational, artistic, pushes the boundaries and also looks at some unusual areas of the subject of woodworking, or at least that's what I think! I reckon it's a good un, but I'll let you be the judge of that.

So what have we got for you? Well, if you've ever wanted to try your hand at musical instrument making, then the first of Shaun Newman's ukulele build articles (p30) will definitely appeal, as he starts by taking you through the initial steps of construction, but not before we discover some treasure down in Devon with Edward Hopkins (P37). Former Editor Andrea Hargreaves returns with a feature on sculptural woodturner Mark Hancock (p42); we show you a tree house-inspired build (p46); and Michael Huntley brings us the last in his series of articles on Japanese joinery, which sees him exploring joints and ideas (p49).

New GW author Greg Stringer shares his keepsake box make with us (p54) before we take a breath of fresh heirloom and ogle the work of Les Lively, a true master of furniture fusion (p58); Dennis Keeling demonstrates the breadth of the personal CNC router (p64); Phil Davy shows you how to make your own try square (p71) and Les Thorne ponders his favourite turning-related things (p80).

In Kit & Tools, Andy King looks at a unique product to make lifting easy (**p20**), proves that diamonds really are a woodworker's best friend (p14) as well as putting a great tool for enhancing your turnings through its paces (p18). All this and more in GW303! Enjoy!



Tegan Foley, Editor



Tegan Foley Editor



Andy King Technical Editor



Dave Roberts Consultant Editor



Phil Davy Consultant Editor

We endeavour to ensure all techniques shown in Good Woodworking are safe, but take no responsibility for readers' actions. Take care when woodworking and always use guards, goggles, masks, hold-down devices and ear protection, and above all, plenty of common sense. Do remember to enjoy yourself, though.

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orking March 2016 Lontents

Tools • Projects • Techniques • Advice



On the cover

A passion for quality

Professional furniture maker Les Lively gets a kick from producing the finest and most unique 'one-of-a-kind' pieces

Make a jumping flea 30

Shaun Newman shows you how to make your own 'jumping flea' - as the ukulele is known in its native Hawaii

Turning sculptural

Mark Hancock's a man who knows what he likes and can turn his hand to a wide variety of styles

Projects

Uku can do it! In the first of a three-part series on making

your own tenor ukulele, Shaun Newman takes you through the initial steps of construction

Under lock and key

Greg Stringer makes a keepsake box for his granddaughter, complete with lock and key

Perfect angles

A large try square is a particularly handy tool when setting out large items of joinery or furniture, say Phil Davy

Techniques

Anatomy of a plane 24 Dissecting a plane to see what the

'chipbreaker' really does

Optimum sharpness 26

For a super sharp edge on your planes and chisels, says Jeff Gorman, you need to optimise the back face

Joints & ideas 49

Michael Huntley discusses various examples of Japanese joints and ideas

Bitten by the CNC bug

Dennis Keeling takes us through the process for using this clever machine and shows how you can use it to make a plethora of projects

These are a few of my favourite things

Les Thorne reflects on the areas of turning that he enjoys the most, including tools, techniques and teaching others

People & places

Edward Hopkins tries his hand at making a treasure chest from engineered board

Function first

Why doesn't 'art' turning enjoy the same following in the UK as it does in the US? Andrea Hargreaves talks to Mark Hancock

Centrefold

Inspired by the concept of a tree house, we take a look at the Maggie's Oxford Centre, whose structure is entirely fabricated from engineered timber

A breath of fresh heirloom

Les Lively's work is a fusion of different styles, which emphasise elegant lines and intricate details such as inlay, double dovetail corners and mortise & tenon joints

Your favourites

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Good Woodworking

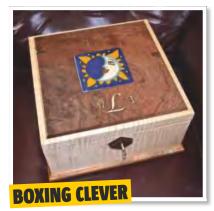
Andy King tests...

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Phil Davy tests...

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| & Axminster dovetail marker | 76 |





Practical presents

Greg Stringer's keepsake box even has a lock and key





Using a personal router

Dennis Keeling tells us all about this clever machine 64



Mark Hancock in profile

We looks at this turner's sculptural pieces



A handy device

Phil Davy shows you how to make this workshop staple **71**





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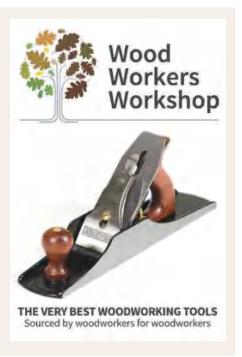
Anyone purchasing one of the US-designed WoodRiver planes gets three months' free subscription to 75, 30-minute sessions alongside access to over 1,100 previous episodes with five new ones each week.

The exclusive offer gives free access to Rob Cosman's amazing interactive online hand and power tool workshops. Rob has worked with many of the world's best craftsmen – including Alan Peters, Sam Maloof, Tage Frid, Monroe Robinson and Peter Korn. Rob is based in Canada and has

been an active demonstrator at international woodworking shows for over 10 years.

He brings his well-respected techniques to your home workshop over the internet. He has been instrumental in the development of the US brand of WoodRiver planes and these are sold exclusively by Wood Workers Workshop in the UK and Europe after owner Peter Sefton bench tested them at his Furniture School; he and his students were so impressed they use them on a daily basis.

It's a great way to get the most out of your new WoodRiver plane and build your skills! For more info, see www woodworkersworkshop.co.uk.



New UJK Technology Deluxe Variable Angle Worktop Jig

This new jig from Axminster Tools & Machinery combines the latest innovations to form an exceptionally versatile worktop jig. A worktop is a major part of the investment in a new kitchen. When cutting the joint in a new worktop only high precision and perfect accuracy will do. Using this jig enables you to produce a faultless joint in a worktop. It is CNC machined to very fine tolerances from thick synthetic resin laminate plate and the material and machining ensure uncompromising stability and accuracy.

The flush face clamping feature, which requires two Axminster guiderail clamps, provides a totally unimpeded working face.



Using any combination of the five sliding locations for the recessed clamp heads means you'll never find a clamp head getting in the way.

The jig will accept a worktop up to 1,000mm wide with a jointing facility at 22.5°, 45° and 90°. The guide slots and preset angles are located with 10mm dowel pins to ensure exact positioning against the edge of your worktop and encompass the principal angles required, plus there is positioning for worktop connectors.

The optional variable angle insert enables you to cut worktops to an angle other than 90°. Using the engraved markers on the jig as a reference, the variable angle insert adjusts the angle of the male joint by up to + or -5°. Current techniques to overcome non-square walls are not accurate and guesswork can result in poor joints. The variable angle design eliminates this and produces a perfectly matched joint. An extra advantage with this jig is that it can find and set the angle required. Supplied with full instructions, a pack of four aligning pins and two flush clamping adaptors. Users will also need a 12mm router, 12.7 × 50mm router cutter, 30mm guidebush and two clamps (Axminster guiderail clamps are recommended if you wish to take advantage of the flush clamping feature). See www.axminster.co.uk.



New dust extractors from Makita



Makita is adding two new, M-Class approved dust extraction vacuum units to its range. In addition, Makita has introduced a dual power extractor that can be powered by mains or battery and will be a very useful cleaner for maintenance teams.

The new Makita VC2201MXI/VC2211MX1 M-Class dust extractors are powered by a 1,050W motor, available in either 110V or 240V mode, which delivers a quiet 22.0kPa maximum suction with an airflow of 3.5m³/min to pull material into the 22l stainless steel tank. These extractors feature a new automatic self-cleaning filter system and are composed of a powder filter, damper and pre-filter, which use a valve system to redirect airflow through each of the filters in turn to release the collected dust into the retainer. The audible airflow sensor bleeps a warning when the tank is full or the pipe is blocked. The M-Class approval allows use with mica, china clay, gypsum, wood dust, masonry, GRP and concrete.

The new Makita DVC861LZ L-Class extractor is operated by both AC mains power and DC batteries, using the twin 18V battery system that is storming the construction and outdoor power tool market with its 36V performance. This will prove invaluable in a location where mains power is not available. The new dry material vacuum has a 1,050W motor that will generate 24kPa maximum, suction in mains mode, and a useful 9kPa suction when powered by battery. Maximum airflow is 3.6m³/min and 2.1m³/min respectively. Rated for L-Class operations for plaster, china clay and mica materials. Suction into the 8l tank can be varied by the dial on the body front adjacent to the large on/off switch. Commercial dust bags fit this machine and the filters are HEPA type. If the batteries are in place and at the same time the mains cord is connected and power available, the mains power takes priority and an indicator lamp shows when AC power is operating.

Prices start from £546, see www.makitauk.com for more info.

Honed for action

The most versatile Veritas honing guide set to date, this new offering includes both the standard and narrow blade clamping heads, as well as the angle registration jig, straight roller base and camber roller base. Combined, the heads accept blades ranging from 3-73mm wide. The bases offer the options of straight or slightly cambered edges on your blades.

The completely predictable results this set offers for a wide variety of blades makes it one of the most useful sharpening aids in the workshop of anyone who works with hand tools. Priced at £84.66, some of the parts can be purchased separately if you wish – see www.brimarc.com.



Narex 8869 Gunsmith's screwdrivers



Normal screwdrivers for slotted screws are tapered, which makes it easy to slot them in quickly, but this has the downside of them only contacting the slot at the top corners. A gunsmith's screwdriver is hollow ground with a parallel tip that engages fully with the slot in the screw. Slower, a little, but much less likely to mar the screw head.

Available from Workshop Heaven, this set of three $-\frac{1}{26}$, $\frac{1}{2}$ and $\frac{1}{26}$ in – feature hardened, polished and lacquered blades with a stained beech handle and knurled brass ferrule. Priced at £34.50, see www.workshopheaven.com.

News



he hunt is on!

Marking its 115-year heritage as a quality tool brand, Wolf Tools is on the hunt to find the oldest surviving Wolf power tools. It's time to go rooting around in your workshop to see what you can uncover! The people with the five oldest examples of Wolf power tools discovered will be offered an exchange for a brand-new Wolf Ultimate cordless impact driver, worth £99. See it in action here: www.ukhs.tv/Tools/Power-Tools/Wolf-Ultimate-10-8v-Impact-Driver.

If you have an old Wolf power tool in your workshop, all you need to do is register the model, its approximate age and if possible. email a photo along with your name and contact details to: toolhunt@wolfdiy.com. The offer closes at 5pm on Thursday 31 March 2016. Good hunting!

A rich history

The Wolf Tools brand was established in England in 1900. The company built an enviable reputation for quality and supplied all power tools to the British aviation industry before and throughout World War II. Since 2001, the company has invested heavily in R&D and produces a comprehensive range of products globally, giving it a competitive edge in developing technologically superior, innovative tools offered at very affordable prices.

Today the Wolf Tools brand has again become synonymous with quality power tools. The new and extended product range offers a plethora of power products ranging from cordless and mains voltage power tools, air compressors, air tools, car jacks, garage equipment, generators, power washers and water pumps, to welders and woodworking.



Mind-bending coffee table

Inspired by the 2008 film *Inception*, the 'Wave City' coffee table by Cyprus-based designer Stelios Mousarris is described as "a well balanced mixture of wood, steel and 3D printed technology." Looking at the sheer skill involved in making such a creation, you cannot deny that this is indeed one of the most amazing coffee table designs ever seen.

Illustrating a sidewalk that seemingly lifts into the air and finally folds back onto itself, the table draws reference from a scene from the film, where dreams are controlled by the dreamer. Carefully carved buildings add a realistic quality to the surreal design object and buildings are both right side up, and suspended upside down. See more of Stelios' incredible work here: www.mousarris.com.

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iworki December 2015











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*Carbide tools require use of diamond belt

** Robert Sorby warranty is for 5 years if machine is not used commercially. Guarantees all non-electrical parts except wear plate which needs replacing occasionally and with heavy use. Motor warranty is 2 years

OURSEDIAR

February: not the most inspiring of months, so why not learn a new skill to pass the time?

26 Sharpening with Tormek woodturning* 27 Fine-tuning hand tools * 29 Turned boxes

* Course held in Sittingbourne, Kent Axminster Tools & Machinery Unit 10 Weycroft Avenue, Axminster Devon EX13 5PH

Tel: 08009 751 905 Web: www.axminster.co.uk

27 Introduction to furniture restoration (1 day)

28 DIY in a day - drills

The Goodlife Centre 122 Webber Street London SE1 0OL

Tel: 0207 760 7613

Web: www.thegoodlifecentre.co.uk

March

1 Pyrography - Ben Beddows

3-4 Introduction to milling

3-4 Beginners' woodturning (2 days) *

7 Bandsaws

15 Bandsaws *

15 Taster session

17 Pen making *

19 Sharpening with Tormek hand tools *

21 Sharpening

22-23 Hollow forms with Nick Agar 23-24 Adirondack Chair *

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19-20 Sussex Trug making workshop 20 Horse logging

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6-11 Furniture making skills for beginners with Tom Kealy 20-23 Woodturning for beginners with Mark Hancock

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2 Furniture restoration 5 Introduction to woodturning 6 Introduction to woodcarving 10 Basic drill skills

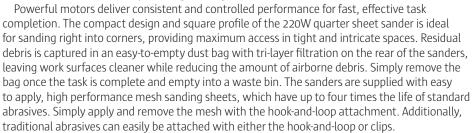
The Goodlife Centre 122 Webber Street London SE1 0QL **Tel:** 0207 760 7613

Web: www.thegoodlifecentre.co.uk

BLACK + DECKER smoothes the way

BLACK + DECKER recently launched its new compact sanding range for homeowners and DIY enthusiasts. introducing new look quarter sheet and random orbital sanders. Both new sanders are compact and lightweight, making them highly versatile and easy to handle.

Both models are operated by simply pushing down with one hand on the intuitive paddle switch. It can be locked for prolonged use, allowing users to focus on the job in hand. The integrated precision grip provides DIYers with greater comfort and manoeuvrability, making sanding tasks effortless.



To find out more, see www.blackanddecker.co.uk.

Protective smocks for turners

Bearing the ProDesign brand, a new range of woodturner's smocks has been released by The ToolPost incorporating many years' experience of using such products in a working environment. Available in a range of chest sizes from 32-58in with a generous 150mm oversize allowance



ensures that a sweater can be worn underneath them, in comfort, while retaining adequate room to allow free movement.

They feature a padded, smooth-lined collar, cut low in front to increase neck comfort but high in the rear for draught-proofing; a double-ended plastic heavy-duty zipper that will not scratch workpieces but makes 'comfort breaks' more comfortable and has a hefty tag for fumble-free operation; cuffs that have hook-and-loop closures for a snug fit and to eliminate flapping sleeves but which are also elasticated so that even in the most full-stretch position movement is never constricted. The sleeves also feature real leather wear patches on the elbows and the left sleeve sports a handy pencil pocket with two sections.

Made from heavy-duty cotton cloth in a 'natural' colour, which offers high wear and abrasion resistance. Priced at £36, see www.toolpost.co.uk.

Midlands Woodworking & Power Tool show 2016

This year's Midlands Woodworking & Power Tool show takes place at the Newark Showground, Nottingham from 18–19 March 2016. Now in its third year, this show is one of the most popular events on the woodworking calendar.

There really is something for everyone at the show – turners including Andrew Hall, Mick Hanbury, Jennie Starbuck, Tony Wilson and Simon Hope; carvers including Michael Painter and Emma Cook; furniture making with Peter Sefton and Peter Tree; sharpening with Nic Westermann; Colin Hickman will be demonstrating 'stick making' and Wayne Mack will be demonstrating the scrollsaw.

A visit to the Midlands Woodworking and Power Tool show is probably one of the best days out you could have this year. Advance tickets, which save money and queuing, are now available by either calling the ticket hotline – 01474 536 535 – or visiting the show website: www.nelton.co.uk.

OFFCUTS

Maker of the 'Hemisphere' cabinet in GW302, Philipp Stummer has recently been awarded a City & Guilds Medal for Excellence in recognition of his outstanding performance in Craft Occupations. He was also shortlisted for a Lion Award and may receive further recognition at the national award ceremony in London this summer. There are several award categories, including the People's Choice Award voted for by the public. Many congratulations to Philipp and fingers crossed that things will go well for him this summer!

Ten Turners Turning will return to Axminster Tools & Machinery's Nuneaton branch from 11–12 March 2016. During this two-day event, 10 professional turners will demonstrate their skills and unique styles of woodturning, explaining any useful tips and techniques used to produce their own trademark turned pieces. Both Friday and Saturday afternoons will see the pro turners competing against each other and

against the clock in the Ready Steady Turn competition. This time the impressive line-up will be Andrew Hall, Andy Rounthwaite, Joe Laird, Mark Sanger, Phil Irons, Richard Findley, Steve Heeley, Tracy Owen and Axminster's own Colwin Way and Jason Breach. To find out more, see www.knowledge.axminster.co.uk/ten-turners-turning-2016

The British Woodworking Federation (BWF) has sadly announced the death of Michael Lee, BWF Membership Director, after a short battle with illness. Mike started work as a 17-year-old apprentice with the National Federation of Building Trade Employers in August 1967, the organisation from which the BWF evolved. Mike was front and centre throughout the evolution of the BWF and was pivotal in moving the BWF to a Limited Company in 2006, and developing into the independent, self-sustaining and powerful voice for the woodworking sector it is today. Mike passed away aged 65; he will be sadly missed

Woodworking Free Reader Ads

Machinery

Hegner HBD200XL woodturning lathe with electronic speed, TO 3800 Multistar Duplex chuck, Vicmarc VM90 chuck, live and dead centres; £950. Buyer collects (?) 01767 316 925 (Beds)

Axminster woodturning lathe (240 × 330mm). Extras include 16 chisels, chuck indexing ring and hole boring kit; £150. Buyer collects () 01223 503 860 (Cambridge)

Scheppach Basato 4 bandsaw, little used with four unused spare blades; £400 (2) 01912 367 455 (Durham)

Multi 9½in planer with thicknesser attachment, two blade cutterblock, 2HP motor and cast-iron bed, with DeWalt extractor; £250 (C) 07881 971 737 (Devon)

Incra LS precision routing system. Positioner, jumbo right angle fence, flipstop and hinge crafter, box jointer router table; £385 (f) 01777 870 309 (Newark)

Elektra Beckum bandsaw model BAS315-4 GWN55 in excellent condition with Elektra Beckum dust extractor SPA1000 complete with dust bag, hoses, etc.; £400 (?) 01795 873 589 (Kent)

Myford wood lathe, 32in bed on stand, 6in faceplates, box of tools, various turning blanks. Call to make an offer

(f) 01255 425 058 (Essex)

Record Power CX2600 dust and chip extractor; £80 ONO, hardly used, buyer collects or delivery can be arranged

(f) 07764 311 564 (Lancs)

Miscellaneous

Jet wetstone grinding system with extra accessories and special base unit. Buyer collects; phone for details

(C) 01844 344 912 (Bucks)

Axminster cast-iron mitre trimmer, as new; £60. Electric motor, 550W, 240V, 1,400 rpm; £40

@ 01162 415 548 (Leics)

7in woodworking vice – £55; carpenter's toolbox - £30; skew planes (Record and Stanley) - £230

(C) 0208 641 4238 (Surrey)

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and address, and post it to:

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Woodworking Kit & Tools

New products, tools and tests

Andy King, Technical Editor andy.king@mytimemedia.com

Diamonds are forever

This kit has everything you need to sharpen, hone and polish your tools while delivering fast and repeatable results every time



So while a quality stone is a bigger investment, the long-term benefits tend to speak for themselves. My own Trend stone still performs flawlessly after being worked hard over its life span.

This particular set from Trend also addresses the thorny issue of honing in general by including a full kit to allow anyone, from novice to pro, to achieve consistent and keen edges on standard flat-backed and square-edged tools.

Alongside the 203 × 75mm double-sided stone, there is a honing guide, a piece of stropping leather, honing compound and cutting fluid for the stone itself as well as a non-slip mat for the stone.



The mat works well, but with the plate of the stone only 8mm-thick, you have to use this near the edge of the bench to back off chisels without the handles hitting the bench and keeping the blades from sitting flat.

It would be prudent to invest in a dedicated holder to lift the stone high enough to prevent this for ease of use in any situation.

The stone

The stone itself is excellent. It's super-flat at +/-0.0005in over its surface, with the 1,000 grit finer side in a continuous solid style while flipping to the 300 grit coarse side reveals a diamond checker pattern on the reverse. These checkers are designed to clear heavier swarf deposits that can quickly build up, as the

cut is pretty aggressive. This side is ideally suited to initial flattening of new chisels or irons and removing small nicks with the finer side kept for the honing stage.

Honing guide

The honing guide is well constructed and very simple to use. It has a couple of drawbacks, however: it won't close down to hold a 6mm or under chisel – 10mm is its smallest capacity according to the packaging but I found it will just about grab an 8mm one.

The design also secures the blades by lifting them up against the top shoulders to ensure a parallel hone by means of sloping lower shoulders that automatically lift the blades

Diamond honing & polishing kit



▲ You slide the blade through until it rests against the ridge of the required hone angle



▲ As the guide is tightened, the blade is lifted until it is secured against the side tabs



▲ The wide roller on the guide keeps things very stable as you work on the stone



▲ Blade projection is sufficient to allow easy backing off while still in the guide

to the correct position as it is tightened.

This method of gripping the blades may be

slightly limiting for some as it means that only

dovetail chisels, plane irons or blades with a

the shoulders to secure them, but that should

thickness of less than 7mm will slide under

cover most general day-to-day tools. The

overall width capacity is 58mm, so unless

you own a No.8 jointer with a 25in blade,

it covers a wide range.

▲ The honing compound is quite hard and chalky when applying to the leather

The 64mm brass roller keeps the guide stable as you work it over the stone, and being diamond the cut is very quick and requires little pressure. Although the raised burr is flat, I found that by applying side pressure as you work, the guide allows you to achieve a camber on a plane iron if needed.

Blade projection is more than enough to allow the wire edge to be backed off with plenty of support on the stone while still in the jig – a definite plus point. From here you can also strop on the leather and this can be done on the bench top, but I'd bond the leather to a flat board to give an easier and more consistent performance.

The supplied polishing compound does a good job but I found it a little hard and chalky; I prefer a softer, waxier compound for this task, but in general it does its job as it should and lifts the edge that bit more if needed.



▲ It does work well enough but the leather is best bonded to a board

Conclusion

The cost of the kit might seem a bit high, especially if you compare it to others, but it's great value. You get a large double-sided, ultra-flat premium stone, a decent, easy to use honing guide and a few other very useful bits and pieces, all of which makes it ideal for anyone who struggles to get consistent, keen edges on the traditional square-edged and flat-backed tools we rely on the most. GW

- + Quality stone; fast, repeatable results; easy to set guide
- Polishing compound is hard and chalky; stone is better with a holder, which allows you to position it higher for chisels

Rating ★★★★★

Typical price: £141.89 **Stone size:** 203 × 75mm

Grades: 300 & 1,000 grit (50 & 15 micron)

Honing guide capacities: Max blade width: 58mm Min width: 10mm Max blade thickness: 7mm Web: www.trend-uk.com

well with the jaws always sitting central to the jig for balanced honing. You can also add an extra nip on the brass knob with a screwdriver if needed.

The side clamping method holds the blades

Sitting the guide with a blade on the setting plate, it's simply a matter of projecting it enough until it registers against the ridged profile to any of the five common angles, and then you're ready to go.

Prices

Our product prices reflect typical values as we go to press. We cannot guarantee these prices, though, and thoroughly recommend that you shop around.

How we rate...

Don't get your hopes up or your wallet out! Well, it works but really needs improvement Performs well, but you will find better Great performance and value for money So good, even Andy would get his wallet out! ****

UJK Bandsaw Buddy

Easy alignment



This woodworking gadget handily sticks to the bandsaw and is multi-functional, but the lack of a measuring scale is a crying shame

oodworking abounds with gadgets, and while I like a gadget if it has worth, I've seen loads – some good, some bad and some indifferent – so when this one turned up, I have to say I was a little undecided.

A closer look shows it to be a well thought out piece of kit, and for the bandsaw, certainly worth keeping close to hand.

Although it has only one component, its quality cannot be faulted; a bar of anodised aluminium with a series of holes drilled that when used in conjunction with either of the two pivot point holes, allows you to use it as

a compass to mark up bowl blanks from 75-400mm at 25mm increments.

It can also be used as a simple straightedge, although it lacks any imperial or metric increments on its long edge; an oversight in my mind as doing so would add an extra dimension, especially for setting the bandsaw fence for general ripping and so forth.

Multi-functional

It also doubles up as a gauge to set the fence parallel to the blade to control blade drift. A couple of rare earth magnets secure the Bandsaw Buddy to the blade; a groove in front of the magnets allows the set of the teeth to drop in so that the Buddy sits flat against the blade. The idea is to then bring the fence up to the Buddy with any difference between the blade and the fence accentuated to allow you to make any adjustments to the fence to bring it parallel to the device.

Trying it on my bandsaw fitted with a 12mm blade it clamped solidly, but would be even better on a wider blade, as it would give it more surface to contact with.

Giving it a twist against the blade, it settled back in the same position each time so it does what it is designed to do, and checking it against my fence, which I know to be accurate, it addresses it smack on, so it certainly seems reliable for a quick check every now and again.

For me, the most useful of all is the simple but effective metric scale on one end. Only 20mm of markings, and in 1mm increments, the idea is that you can adjust your fence using the Bandsaw Buddy and set it consistently for finer veneer cuts, and if you've set the saw fence previously with the Buddy, the resulting veneers should cut consistently.

You could of course use a steel rule or similar to do the same, but the beauty of the Bandsaw

Buddy is that with its rare earth magnets, it's

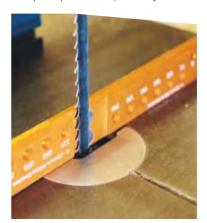
designed to be stuck to any metal surface on the bandsaw so it's always to hand and within

reach, which is useful in its own right, but in

my opinion, it's just a pity it doesn't have that



▲ This simple ruler scale makes it easy to set up veneer rips



A Rare earth magnets secure the Buddy firmly to the blade



▲ The fence is brought up and adjusted so it is parallel to the Buddy

itself to the saw



➤ Once finished with, the Buddy simply secures



- + Neat multi-function; sticks to the saw for easy accessibility
- No measuring scale on long edge

Rating ***
Typical price: £19.99
Length: 250mm

Conclusion

ruler function! GW

Circle diameters: 75-400mm **Web:** www.axminster.co.uk



▲ A series of holes allows bowl blanks to be marked up for cutting





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WOODWORKING



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Texture your turnings

This clever tool from Crown allows you to add a unique textured appearance to your turnings - go on, experiment away!

ver the last few months I've done a bit of lathe demo work, turning a few pen kits and the like at a few shows to demonstrate that, as an amateur, you can achieve some decent results, but I didn't think I was ready to attempt any real woodturning, at least, not in public!

I have been experimenting at home, though, and also watched the real turners at shows whenever I got the chance to try and pick up some tips. Spying a really nice little textured turning by Chris



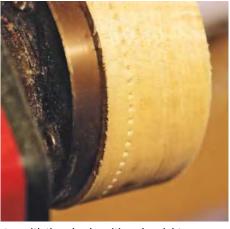
▲ The sleeve rotates to register against



Simple dimpling can be made...



▲ A flat on the sleeve sits on the toolrest, which delivers support and retains the correct angle



▲ ...with the wheel positioned upright

Pouncy, I asked what was involved and after a quick demo, it looked so simple that I put it on my 'to try' list!

Texturing

This particular texturing tool from Crown is quite short so it's better suited to smaller or shallow work. There is also a longer handled version available for bigger work, which also allows you to impart texture into a deeper turning where the short handle version doesn't give enough cantilever at the handle end to afford good control.

The clever part of texturing tool comes both in the profile of the wheel as well as the angle it addresses the work, and simply altering these makes a difference in what pattern is imparted on the work.

The thick sleeve, secured with a couple of hex screws, can be rotated as well as slid along the tool shaft to alter the overhang and has a large flat that sits on the toolrest to give maximum support in use.

A set of indexing marks on the sleeve of the tool allows you to set the angle of the wheel consistently to gain identical patterns, as well as reversing the angle for cross knurled and chevron effects.

In this particular area I did find that when the wheel ran in one direction it was fine, but swinging the position to give a reverse to the first angle, the small brass retaining screw for the wheel could unscrew under load as the wheel runs in the opposite direction.

I found that in this situation, it needed additional nipping with a pair of grips as the

Crown mini spiralling tool



vorking Verdict

+ Allows you to add a unique look to your turnings; great for trying out and experimenting with different texturing effects

Wheel retaining screw can work loose

Rating ***

Typical price: £44.95; 17-tooth texturing

wheel - £19.96

Spiralling wheels supplied: 17 and 27 tooth **Indexing markings:** 180° in 15° increments

Web: www.axminster.co.uk

screw is too small to gain adequate pressure from fingers alone. Simple enough, but I would guess a hex wrench fitting would be the better option here.

In use

Before I got too involved, I experimented in order to get to grips with it, opting for a flat face platter-type piece as well as an outside edge on a simple cylinder turning. It's certainly a wise move as it does require a bit of work to get the tool addressing the work correctly in order to achieve a clean and consistent cut. Also, speed is important and I found a slower speed worked well for me.

After starting off at around 1,000rpm, I was initially finding the tool difficult to engage and it was skidding, but simply slowing the lathe speed to around 600-700rpm altered it dramatically, and allowed me to address the work and get the cut started very easily.

Doing practice cuts is definitely advisable when you first start out, and if things do go wrong it's very easy to simply turn the wonky bit away and have another go, which is far better than spending time on a nice piece only to ruin it by getting the texturing wrong!

It's also worth experimenting on different timbers as well. I found a harder close-grained timber such as maple worked well for a crisper definition. Sapele worked reasonably well and being that bit softer, it was easier to get the tool to cut in, but trying it on a spiral on the dished centre of the platter face where the grain pattern goes from long to cross, the shorter grain and softer timber stripped the profile a good testimony to practice and timber selection before starting the final piece!

Conclusion

With two spiralling wheels supplied, there's also an additional wheel available for other texturing, which is more than enough to experiment with and alter the designs and patterns on many pieces to make your mark. I'll certainly be having a bit more of a delve into the nuances over the next few weeks!



Altering the angle...



▲ Working the face on this softer sapele gives fast results



This spiral attempt shows the problem of crumbling short grain on softer timbers



...allows a chevron style to be introduced



▲ Deeper profiles are well defined if they aren't too close to each other



Experimenting with texture and colour is all part of the fun!

Hedgehog Easy Air Wedge

Lifting made easy

Easy to position and capable of lifting many an object without strain, it's a shame the Hedgehog Easy Air Wedges are only sold individually

correctly positioned. A push on the button on the bulb lets the air out so you can easily tweak a aving fitted my fair position by pumping up or releasing share of windows and doors air accordingly. and using all manner of wedges and

screwdrivers to hold things while I set any fixings, I've always got by, so I was a little sceptical when I received the Hedgehog Easy Air Wedge for review.

Its purpose is to not only shim a door or window frame across or up. it will also apply enough pressure (it will lift up to 120kg) to trap it in position in an opening while you make any further marking or drilling for fixings.

Made from a thick, durable Tarpaulin TPU (Thermoplastic Polyurethane), it's resistant to scuffs and abrasions, making it ideal for sliding into thin gaps between frames and will fit into



▲ The bulb is squeezed to inflate the bag as needed; even heavy weights are easily lifted

▶ Used as a pair, door frames are easily adjusted for plumb, ready for fixing



Many uses

The bag construction is such that as it inflates it doesn't expand like a balloon; the welded seams and material used constrain the bag so that as it inflates, the bag expands while the seams pull in to allow for it. This gives around 70mm of expansion available for moving or securing. It also proves useful for sliding under heavy objects, such as furniture or machinery, to lift it enough to slide something beneath to allow easier moving.

a 2mm-wide opening.

is inflated with the bulb,

squeezing it until the bag

securely in the opening, or to

shunt it along or up until it's

tightens into the gap enough

to hold the frame or workpiece

Once in position the bag

I decided to put it to the test by trying it under the washing machine at home; at



▲ An indication of how powerful they are. This is a heavy washing machine, easily supported



▲ It's equally simple to lift the frame as a unit or to adjust one side for level

around 70kg it worked a treat. Even as it starts to rise there's no effort needed to continue the lift; I simply squeezed the bulb as much as needed and up it went - brilliant!

So in an on-site fitting environment – doors and windows are the obvious scenarios here you'll need to check before positioning against potential sharp objects in case of possible puncturing, but it'll easily cope with standard brick and block or between timber studs.

The Hedgehog bags came into their own when fitting a new door and frame to my workshop. With the frame in the opening, I used them to plumb the frame and also to adjust the cill for level and the position was held very securely while I drilled and drove home the fixings, freeing up my hands to slide in packers at the appropriate places.

They also worked in positioning the door in the frame to check the fit and when marking the hinges, but the bags work best when they can be set centrally so the bag can inflate uniformly.

With a rebated frame the bags can't slide right in centrally so as you pump them up, if you apply too much pressure, as it inflates it can begin to slide out, but I found a nipping pressure more than adequate to hold the door in place. The only real downside in using the bags is that they are sold singly. A pair also allows very easy adjustments to be made to level anything up and slide in packers to set the level, and then reposition them to shunt across to the correct position.

Conclusion

Anything that needs trapping in an opening, lifting or levelling, this piece of kit does with ease, but one just isn't enough! @W

Good **loodworking** Verdict

- + Easy to position; lifts any heavy object without any strain
- Need to check for sharp protrusions; ideally you need more than one

Rating $\star\star\star\star$ Typical price: £15 each Max lift: 120kg **Size:** 160 × 160mm Max packing width: 60mm

Web: www.easyairwedge.com



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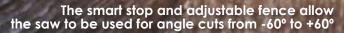
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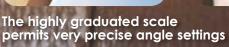
Three models are also available as cordless versions.











| Model | Crosscut at 90° | Cutting depth at 90° | Cutting depth at 45° | Angle cuts | Available in Cordless |
|--------|--------------------|-------------------------|-------------------------|--------------|-----------------------|
| KSS300 | 300mm | 40mm | 27mm | -45° to +60° | Yes (18v) |
| KSS400 | 400mm | 49.5mm | 38mm | -60° to +60° | Yes (36v) |
| KSS60 | 408mm | 61mm | 47mm | -60° to +60° | Yes (36v) |
| KSS80 | 370mm | 82mm | 55.5mm | -60° to +50° | No |



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Anatomy of a plane

Dissecting a plane to see what the 'chipbreaker' really does

t was about the end of the 18th century when 'back irons' began to be screwed onto the 'irons' of wooden 'bench' planes. I was taught (many years later, of course!) to call them 'cap irons', but some people, including many of my internet contacts, call them 'chipbreakers' because they see that as their intended purpose.

The deep-throat construction of wooden bench planes actually makes it impossible for the bench worker to observe closely how the irons work together. But this has not prevented people from writing very similar and quite dogmatic accounts of what happens as a shaving is peeled from a workpiece.

In his book *Tools for Woodwork*, Charles H Hayward, describes the splitting action (visible in **Pics.3** & **4**) and then goes on to say that the back iron "breaks the shaving almost as soon as it is raised. Being thus robbed of this strength, the shaving cannot lever up the wood in front of the cutter, and a split is thus avoided." I have never understood this.

So I recently bought a cheap, Bailey-pattern smoothing plane and used close-up digital photography (a modern-day magic that was not, of course, an option for Hayward) to get a slow-motion look at what actually

happens. The only limitation imposed by this photographic experiment was that I had to set the plane to make shavings thicker than we usually would use. However, the statement I'm querying can only apply to shavings that are thick enough to act as a rigid beam.

Cap iron action

In **Pics.3** & **4** you can see a wide space between the front lip of the mouth and the cutting edge (the shaving aperture). The cap iron's 'setback' was about 1.6mm from the cutting edge. In this situation the blade's edge is acting as a cleaver and has created a split.

As the fibres, which in this example lie at about 10° to the workpiece edge, were raised they were turned clockwise through 35°. Here the split reached the point where after less than a millimetre of further travel, the shaving broke, leaving behind a torn surface.

In both close-ups, the roots of the shavings show marks where they are fractured, telling me that, cap iron or no cap iron, shavings are ruptured only by the blade itself.

If you follow the advice to set the cap iron and blade edges very close (**Pic.7**), a rather different shaving is generated. It looks to me as though fibres could not be



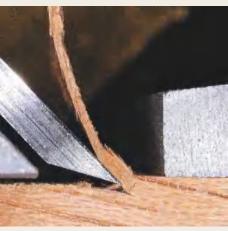
▲ Pic.1 I've made a jig that lets me check the cap iron's fit while under pressure

lifted because they were pressed downwards by the tip of the cap iron. One penalty is that the plane becomes harder to push and shavings are more likely to be forced between the cap iron and the back face.

In the wide-shaving aperture (**Pics.3 & 4**) you can see the splitting that causes tear-out. However, if the fibres cannot be lifted, they cannot be split. In **Pics.5 & 6**, the front lip of the mouth has been reset so close to the edge



▲ Pic.2 Moving to the right, cutting with the grain, the edge has cleanly severed some fibres while the back face pushed them upwards

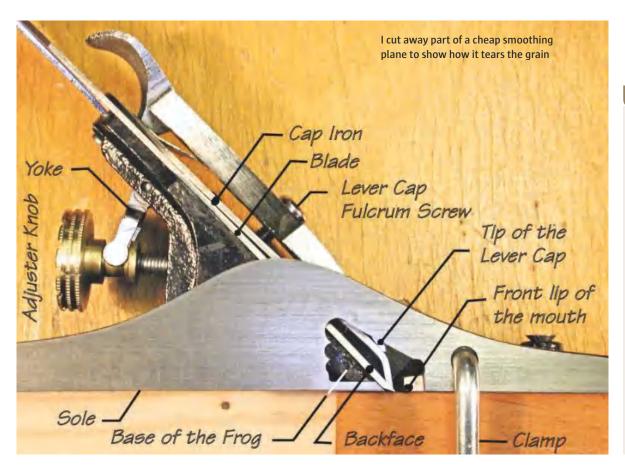


▲ Pic.3 Here I'm planing against the grain without a cap iron; note the stress marks at the root of the shaving



▲ Pic.4 Planing against the grain using a cap iron. Note the torn surface, the stress marks and the kinks in the shaving

Close-up on cap irons



Up close

In GW173 I also looked at the way shavings are made, but I used a single-ironed rebate plane. Removing part of a flank of a cheap smoothing plane has let me use a digital camera to get a magnified view of the action of this double-iron. The plane is fixed to a support that is fixed to the base of a camera stand. I used the screw of a cramp head to feed the workpiece along the plane

that it positively holds down the fibres immediately in front of the edge. Instead of acting as a cleaver, the sharp edge does a proper surgical job.

Best practice

When aiming to avoid tear-out on tricky grain: ■ Set the cap iron edge about 1.5mm from the cutting edge.

- Use the finest practicable cut.
- Adjust the shaving aperture to comfortably allow the passage of a 0.1mm (4thou) feeler gauge when inserted parallel to the blade.

Of course there are times when progress is more important than finesse and a very fine

aperture can be inconvenient.

If you care to invest in a thicker blade, you might consider adopting the method suggested in GW180. This involves inserting the new blade and resetting the frog to create the above shaving aperture. For run-of-the-mill jobs, revert to the wider shaving aperture you get when fitting your standard blade.

Cap iron lore

Because the adjustment yoke operates via the cap iron, too much setback can make the edge project so far beyond the sole that the adjuster knob can't wind it right back.

Given half a chance, a shaving will try

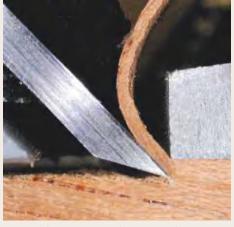
to climb up the back face and jam between a badly fitting cap iron and the blade. To effectively check my filing of a cap iron's contact area, I simulated the actual working situation by making a simple jig from a lever cap and a piece of 50×25 mm.

Also check the contact area at the lever cap tip. Unless the tip rides on the crest of the cap iron's curve, the operation of the blade-setting knob can become erratic.

One last point: 'low-angle, bevel-up' bench planes have a cutter geometry very similar to bevel-down planes. They have a reputation for leaving an excellent finish... and they do not employ cap irons!



▲ Pic.5 Planing against the grain, using a cap iron and a fine shaving aperture



▲ Pic.6 Planing against the grain without a cap iron and a very fine shaving aperture



Pic.7 Planing oak against the grain with a very finely set cap iron

Optimum sharpness

For a super sharp edge on your planes and chisels, you need to optimise the back face, says **Jeff Gorman**

narly grain needs a super sharp plane iron, and for paring dovetail lands (Pic.1), the chisel must be so sharp that it responds to the lightest touch. Now, to get super edges, you may have produced polished micro bevels, but for ultimate sharpness we have to give time (and quite a lot of effort) to polishing the adjacent surfaces – the back faces.

Sharpening the back face...

If you can, remove any deep grinding marks or rust pits on a diamond sharpening plate or a new, dead-flat stone. Just how much of a blade's length you prepare in this way depends on your life expectancy: just how much do you realistically expect to use in the time left to you? Working on a third to a half of the length is probably sensible.

Next, take a piece of plate glass about 280 × 60 × 4mm and, using a flexible adhesive, mount this on a slightly wider and longer wooden base. I suggest this size because it suits a quarter-width sheet of aluminium oxide or silicon carbide abrasive paper.

Cut your paper and fix it down with a strippable adhesive such as 3M Spraymount. Once the back is flattened, most of the work consists of removing the scratches from the previous operation, so it could be prudent to start with a grit that's a bit too fine. Then, if progress is slow, you can go back to a coarser grade. Rub with the blade at about 45° to the line of movement, then turn through 90° and rub again. This might hurt your thumb and fingers and make you want to give up, in which case try searching your box of odds and ends



▲ Pic.2 Instead of hurting your thumbs and fingers as you polish...



▲ Pic.1 A chisel needs to have very sharp edges for accurate paring

for a rubber suction cup and make a Vropa (see **Fig.1**, **Pics.2** & **3**). The alternative would be to buy a valve lapping tool – a rubber sucker on a stick! – from a good car accessory shop. When you have removed all the previous scratches, progress to the next finer grade, vacuum cleaning the work area before each change. Complete this stage with 1,200 grit or finer.



▲ Pic.3 ... why not try my little invention, the flamboyantly named Vropa

... and polishing up

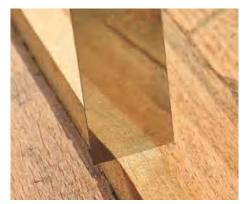
Make a wooden lapping plate by planing a smooth, flat surface on the end-grain of a hardwood with a cross-section about 200 × 40mm. Do not smooth it with any abrasive paper. I used European beech that didn't wear and held the polish quite well (**Pics.2** & **3**.)

Rub a chromium oxide buffing soap onto the wood, and make it spreadable with a few drops



▲ Pic.4 How to get the right angle. The edge is square, but the blade is leaning towards us...

Chisel sharpening



▲ Pic.5 ... and remains square, though the blade is leaning away...



▲ Pic.6 ... but getting the chisel square both ways makes it look transparent



▲ Pic.7 Here the blade is vertical but the edge is out of square

Make the shaft of the Vropa from a 6" length of 3/4" dowel Section through the shaft shows how the suction pad is fitted Air vent Rubber suction cup from a child's toy

▲ Fig.1 My thumb-saving invention, the Vropa

Jargon busting

Arris: The line formed at the intersection of two surfaces

Micro bevel: A very narrow bevel formed on the honing bevel that in turn rests on the grinding bevel

Vropa: Pronounced Vee-roper. Vertical rectilinear oscillatory pressure applicator. It's my gadget so I can invent as pretentious a name as I like!

Polishing or honing compound

Used just for the purpose of chisel back faces, a bar of polishing soap should last forever you could divide a chunk with a couple of friends and still have more than enough. Try a soap specified for polishing hard, ferrous metals, but bear in mind that the frequently recommended jeweller's rouge is really intended for soft metals. Some car paint cutting compounds and chromium polishes will also do the job, but the water content of some creams might swell the wood. If you're lucky enough to have any contacts in metal polishing trades, they would probably make an excellent source of scrap ends of polishing soap. Otherwise, you can get a reliable bar from Ashley Iles – www.ashleyiles.co.uk/turning tools.html – or Axminster Tools & Machinery – www.axminster.co.uk

Remember that the long arrises between the back face and chisel sides will have been sharpened, too. So be careful especially if you have worked up a new chisell

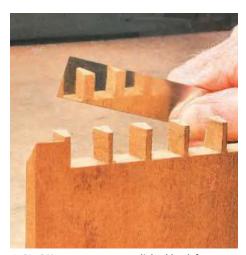
of paraffin or white spirit. You'll feel rewarded when you see the back of the blade becoming more and more reflective as you slog away until, according to one internet wag, "you can use it to inspect your nasal hairs."

Note of warning

When paring with the chisel back down, across the cheek of a tenon for example, a straightforward push should generate a well-controlled cut. However, if the back face suffers any rounding (dubbing), there will be a minute clearance between the cutting edge and the wood. This will mean that to get the tool to cut, the handle has to be lifted, and the surface no longer guides the tool. So, while some people swear by the benefits of stropping the honing bevel on a felt wheel, I suggest that you resist the temptation to machine strop a chisel's back face, and make do.

Putting the edge to work

To strike a blow with the chisel, it's often best to stand behind the tool, yet to see whether it



▲ Pic.8 You can use your polished back face for a better look at what you're doing

is vertical we need to sway to one side to judge the angle. The snag with this is that while straightening up, it is possible that the chisel shifts as we move, but there is an answer. With the mallet in hand, adopt the pose for a striking blow, and shift the handle until you see the reflection of the workpiece edge (Pics.4 & 5), so that as you align it with the actual edge, the chisel almost looks transparent. The chisel will now be vertical (**Pic.6**) and you can strike knowing that your cut will be square to the face of the workpiece. You can also avoid some bending and stretching by using your elite chisels as handy mirrors, too (Pic.8). 🕾



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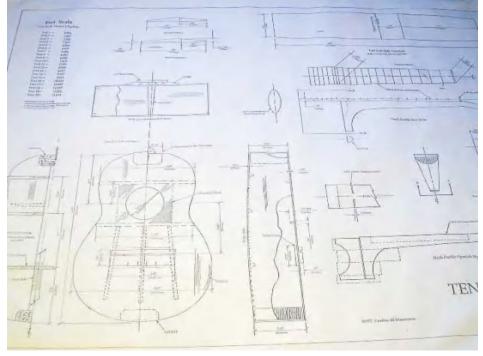


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Uku can do it!

In the first of a three-part series on making your own tenor ukulele, **Shaun Newman** takes you through





▲ Pic.1 A scale working plan is a must

he ukulele is currently enjoying unprecedented success in Britain and its popularity is showing no sign of diminishing. In this series of articles, I hope to show that making a really good sounding instrument, using no more than moderate woodworking skills, is possible.

Readers may wonder why this diminutive of stringed instruments, which originated in Portuguese Madeira but moved out to Hawaii towards the end of the 19th century, has such stature among both players and makers. The 'machete de braga', a small four stringed instrument, was introduced into Hawaii by sugar plantation workers from Madeira who celebrated their safe arrival on the island by giving street concerts and singing Portuguese folk songs to the indigenous people of Hawaii. Their music, and the machete, became an instant success and drew the attention of the local Hawaiian Gazette. Within weeks, locals were asking where they could get a 'ukulele' as they called it in their own language... the literal translation of which means 'jumping flea!' It seems that among the immigrants who made the journey from Madeira to Hawaii were three skilled cabinetmakers who were promptly persuaded to set up an instrument workshop to make jumping fleas. Their work, it seems, even attracted the attention of the king of Hawaii (King David Kalakaua) who not only became an avid player but also made his own instruments.

Popularity

But still this does not answer the question regarding popularity today. For instance, why do many primary schools now offer ukuleles to pupils as a first choice instrument over, for example, the recorder? Well, it is relatively

Making a tenor ukulele: part 1



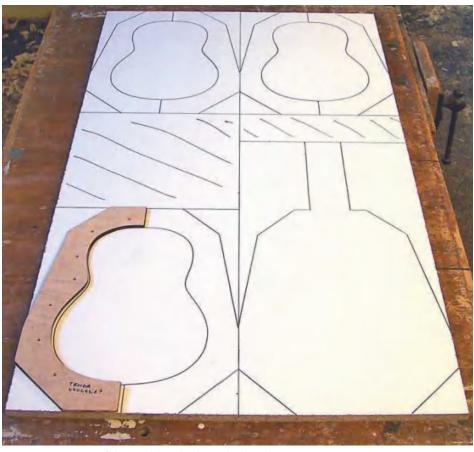
easy to play from day one, and can be used to accompany singing or it can be played at a virtuoso level that is really inspiring to young musicians. It is worth looking at Jake Shimabukuro playing While my Guitar Gently Weeps on YouTube. He already has over 14 million hits! There are also some clues in its size. First, it is a very portable instrument, light and with a strong and sonorous voice. Many feel the sounds it makes are extremely uplifting and cheerful. It is also relatively cheap and it is interesting to note that in the USA, for example, during the great depression, ukulele sales were at their highest. Further, there are many types of ukulele ranging from the very small soprano to the concert, the tenor, the baritone and the bass. They all have just four strings, but as the size increases, the tuning may vary.

This series of articles will concentrate on the tenor ukulele. I chose this type as it is big enough not to be annoyingly fiddly while it is being made yet it is still small enough to reduce the cost and be light and easily portable. I will also be explaining the 'Spanish' or 'slipper heel' method of construction. The alternative method is known as the 'box' method. In the former, the neck and heel are fitted integrally as the whole instrument is being made. With the latter, the sound box is made and the neck is fitted afterwards.

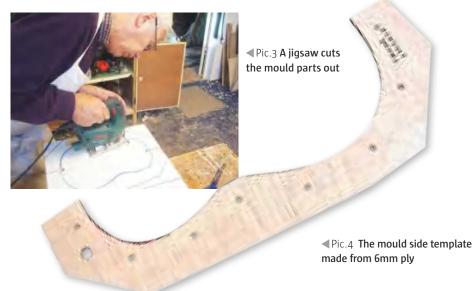
Timber and tools

Original Hawaiian ukuleles are made from koa but, as this is an endangered timber, I chose not to use it. The instrument can be made from almost any tonewood. Popular choices include rosewood, walnut, cherry and mahogany for the back and sides, and spruce or a hardwood for the front. This ukulele is made from plain maple for the back and sides and Sitka spruce for the front. The neck is mahogany while the fingerboard, bridge and headstock face are rosewood. The inlays are red and black dyed tulipwood and white sycamore.

One or two specialist tools are required, and these will be described during the construction method. Notable. however, is the need for a bending iron to get the correct shape for the sides, a trammelling router base to cut the channel for the soundhole inlay, and a thicknessing gauge to ensure the back, sides and front are evenly reduced to around 2mm. If the intention is to make several instruments, then it is worth buying these specialist items from a supplier, such as Tonetech or Stewmac



▲ Pic.2 Components of the mould marked onto chipboard



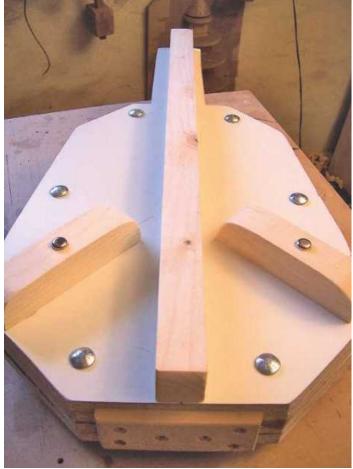


▲ Pic.5 Attaching the template onto a side piece



▲ Pic.6 The 'spindle moulder' in action - watch your fingers!

Project



▲ Pic.7 The underside of the mould



varnished on the inside and ready to use







▲ Pic.10 The No.080 cabinet scraper in use



▲ Pic.11 Bending the sides on the hot iron



(see suppliers sidebar at the end of the article). Alternatively, each can be homemade and can do a perfectly adequate job. The bending iron, for example, can be made from a 250mm length of cast-iron drainpipe attached to a gas-operated blowtorch. There are several clips on YouTube showing how one can be made. The trammelling router base can be made from plywood with the shank of an old 4mm drill to act as the pivot. Instead of a thicknessing gauge that can take readings across a wide piece of tonewood, it is possible to use a simple Vernier and provided the material is planed evenly, the edge measurement will be a good guide as to the overall thickness. Finally, wooden cam clamps are a real necessity but can also be replaced by 'G' cramps, swivel handle ones or spring clamps. Apart from these specific tools, the rest will normally be found in the box or somewhere in the workshop.

A word about glue: purists will still insist on hot animal glue, but modern adhesives are superior and more straightforward to use. Most instrument makers use Titebond, and usually the 'Original' brand. It is fast grab, dries hard, can be easily sanded and does not inhibit sound.

Getting started

I would strongly advise on buying a working plan (Pic.1) for a tenor ukulele as it is always

▼Pic.12 The sides held in the mould

Making a tenor ukulele: part 1

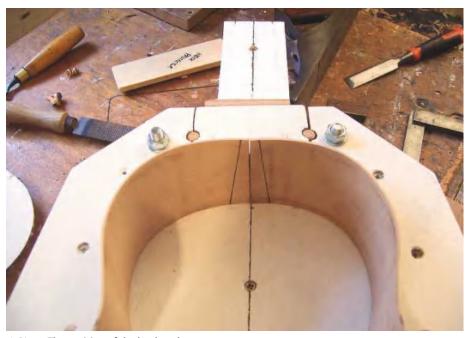
reassuring during the construction process to check that everything is going right and the measurements and layout are not getting out of kilter. There are many plans available and some can be downloaded free online.

The next stage is to make a mould in which to build the instrument. Some makers use a workboard instead, but I find the mould holds everything very firmly in place so that when the instrument goes three-dimensional. nothing will have moved out of line. The mould is made from 19mm melamine-faced chipboard (Pic.2) and held together with coach bolts. The melamine resists wood glue quite well so you don't end up wrestling the instrument out of the mould if you have accidentally glued it in! The components of the mould are cut out with a jigsaw (Pic.3). The shape of the side of the ukulele is taken directly from the plan and transferred to a piece of 6mm plywood (Pic.4). The inside edge of this is cut on the bandsaw and finished carefully as it will be attached to the underside of each piece that makes up the sides of the mould (Pic.5) and acts as the profile to a bearing-quided flush cutter in the router. I used my homemade 'spindle moulder' to cut the sides accurately; this is a plunge router screwed to a board and attached to the underside of a Workmate. The bearing-guided flush cutter is adjusted to the correct height and each side piece can be shaped to an identical form to offer perfect symmetry to the mould (Pic.6). The base of the mould needs a centre support and I put two 'feet' either side so that it would sit evenly on the workbench. The centre strip doubles up as reinforcement that keeps the neck area straight and flat, but it also means the mould can be held in a vice (Pic.7). Once the inside of the mould is complete, it is varnished to avoid any accidental gluing there as well (Pic.8). Note also that a small section at the top end of the mould is made removable so that the neck may pass through when it is attached to the sides of the ukulele.

Sides and tailblock

This is where the real business starts! The maple sides are cut slightly too long to begin with, at 500mm, and planed flat along the edge that will meet with the ukulele front (**Pic.9**). The other edge of each side tapers slightly from the tailblock end to the heel. At the tailblock the depth is 74mm and at the heel, 66mm. The sides are then brought to a thickness of just 2mm using a scraper plane (Pic.10) or cabinet scraper and sander. If the sides are left too thick, it will make bending them very difficult. At the waist area, I often reduce the thickness to as little as 1.5mm. This does not weaken the instrument as it is at its thinnest where it is most curved, and that curvature is very strong.

Before bending the sides to shape, the wood must be wetted with plain water; this creates a steam cushion as the wood is held against the bender (Pic.11) and this helps to prevent



▲ Pic.13 The position of the heel wedges



▲ Pic.14 Cutting the headstock scarf joint



▶ Pic.18 The heel

and wedge slots marked out

▲ Pic.16 The heel stack in clamps



▲ Pic.15 The heel stack



▲ Pic.17 Cutting the 'slipper' on the bandsaw



▲ Pic.19 The wedge slots chiselled out

Project



▲ Pic.20 Carving the heel



▲ Pic.22 Widening the headstock



▲ Pic.24 The headstock cover glued on



▲ Pic.26 Rounding the face of the tailblock



▲ Pic.21 The ledge to house the top of the soundboard





▲ Pic.25 Marking the final headstock shape out



▲ Pic.27 The tailblock inlay in the jig

scorching. If a cast-iron pipe and blow torch bender is used, extreme care must be taken not to burn the wood, so frequent soakings are needed. Once the sides are at the correct profile they can be held in place in the mould with cam clamps (**Pic.12**); this helps to resist the temptation that the wood has to return to its original flat shape. At this point it is necessary to mark the ends of the sides to show the angle at which they will sit in the heel slots (**Pic.13**).

The headstock and neck

Next comes the head and neck of the ukulele. This is made up from a single board of quartersawn mahogany (I chose a lightweight Brazilian variety) approximately 750mm long ×

60mm wide × 25mm-thick. A scarf joint is cut at one end to a 17° angle to make the headstock (**Pic.14**). I marked the line of the angle to allow for an initial length of 140mm for the face of the headstock; this is cut to its exact size later. The heel is made up of a series of blocks cut from the other end of the board and glued to the underside of the neck (**Pics.15** & **16**); this uses around 390mm of the timber. The point at which the 14th fret will sit is marked onto the neck and the shape

of the heel is created in relation to that point. Fret 14 is 245mm from the point at which the bone nut will touch the headstock facing and sits at the shoulders of the ukulele. Next, the layout of the heel is marked showing where the wedge slots will be cut, see further explanation below (**Pic.18**). The rough shape is cut on the bandsaw (**Pic.17**), or can be taken out with a bow saw.

Next, the slots are sawn and chiselled out where the wedges will hold the sides of the ukulele in the neck (Pic.19). Before the sides can be fitted the heel should be carved. It is worth getting this as close to the final shape as possible, as it is difficult to change the overall profile once the sides are in place for fear of scratching or chipping them (**Pic.20**). Also, on the upper side of the neck, where the fingerboard will sit, it is necessary to cut a small ledge to allow the front to be glued into place; this is at a depth of 2mm, which will be the eventual thickness of the front (Pic.21). Then, just before fitting the sides the headstock must be prepared. It must be made 20mm wider than the neck to get the correct shape so two strips of mahogany are added (Pic.22). It is best to put on the headstock facing now. I made this from 2mm-thick rosewood with veneer strips running through the centre to add some colour and decoration (Pic.23). The headstock facing is then glued on and held in place with clamps (Pic.24). The final shape of the headstock is then marked out ready to be cut (Pic.25).

The tailblock is next and is made from a billet of mahogany, cedar, pine, lime or any stable



▲ Pic.28 Chiselling the slot for the tailblock inlay

▶ Pic.29 The heel wedges in place



▲ Pic.30 Wedges are cut flush



▲ Pic.32 The soundboard in the jointing jig

wood which is not too heavy. It is made to the depth of the tail end, i.e. 74mm, and is around 19mm-thick and 65mm wide. It must be curved on one side where it will be attached to the lower ends of the sides (Pic.26). Once clamped into place, a tailblock inlay can be made. This is not essential but also adds a touch of decoration to match up with the headstock facing and successfully covers the join where the two sides meet. I made the inlay from rosewood with strips of red tulipwood veneer and black and white veneers sandwiched together in a similar fashion to the headstock face. I usually taper the tail inlay (Pic.27) as when it is made it can be tapped into a slot which has been cut out ready and it tightens into position with each tap of the hammer; this helps the glue to hold it firmly in place (**Pic.28**).

The next stage is to attach the sides into the





▲ Pic.31 The soundboard edges made true



▲ Pic.33 The soundboard is reduced to 2mm thickness

heel of the instrument. Some makers cut 2mm slots into the sides of the heel and fit the sides directly into them. As mentioned, I use wedges instead as it makes for a very strong join and adds vertical to horizontal grain, thus adding strength to the heel (Pic.29). I have seen many repairs needed where an instrument has been dropped and a fracture has appeared across the heel – the wedges help to guard against this. The wedges are gently tapered so that they tighten when tapped in. Once in place they are trimmed with a flush cutting saw (Pic.30).

The soundboard

This is regarded as the most important part of the instrument as if it is made too thick, or with bracing which is too heavy, it will sound dull and not have the resonance required. The soundboard is made from two pieces of

bookmatched Sitka spruce. The first task is to plane the inside edges of the boards perfectly straight and flat. I also run along the edge with a sanding stick made from an old 600mm spirit level with abrasive attached to the edge with double-sided tape; this ensures a 90° angle and a perfect join (Pic.31). The boards are placed into a jointing jig made from a piece of plywood with a batten attached to one edge and wedges to the other; this allows the butt join to be tightened as two further wedges are tapped into the jig (Pic.32). A strip of parcel tape is placed along the centre of the base of the jig to ensure the front does not accidentally become a permanent fixture to the jig itself! Once the glue is dry, the soundboard can be reduced to 2mm and preparations can be made to inlay the rosette (Pic.33). GW

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Home truths



eet Dickie from up by the church (Pic.1). A quality bricklayer, he did the blockwork for my garage. He has the calm equanimity of an accomplished builder who can tackle almost anything. He's coming to the end of a very complicated extension to his old school house, and he's done it, of course, very well.

Engineered flooring

He'd not laid engineered flooring before but **Pic.2** shows him finishing off. The nailing jig is clever: he taps the board home with the rubber mallet, then, with the jig in place whacks the button, injecting a flat nail exactly where it's

needed. It takes seconds (though the whole floor took 10 days). The only glue is on the ends of the boards as they too are knocked together.

Engineered flooring is an interesting product. 6mm oak is impeccably glued to 15mm superior WBP ply. (Question 1: What does 'WBP' stand for? All answers at the bottom of page 41.) The strips are lightly chamfered along the grain, and tongue-and-grooved all round. The oak is of 'character' grade and has some wide knots, but they are so immaculately finished that they do indeed contribute character, and enhance a floor that would otherwise be too perfect.

If you'd have told me not so long ago that you had the bright idea of gluing 6mm oak to 15mm

ply, thereby preventing the oak from moving, I'd have said it wouldn't work. I'd have said that nothing but nothing can stop timber moving and as sunshine follows rain, the oak would develop a myriad of fissures, a fine version of the honeycombing that results from bad kilning. It might also buckle, cup or at worst delaminate especially in damp conditions. And I'd have been wrong on all counts, but only, it turns out, if your product was of top quality.

Ecological building

John Fanthorpe's is. He has a Portacabin as a showroom. It's an oven in summer and a fridge in winter (and sometimes vice-versa). When he

Woodworker's journal



▲ Pic.1 Dickie - a quality bricklayer

laid 14 boards 190mm wide side by side as a floor years ago, he measured the overall dimension to the millimetre. It hasn't altered. At all. The surface has responded as you'd expect from boots and mud and rain, but it has not otherwise deteriorated. At all.

Outside he has a rainwater butt and in it lives a sample of board. This is to prove that his specified adhesive will always hold firm. The sample is black and rather more than 21mm-thick, but it has not delaminated. At all. So if you're anticipating a bit of flooring and you think you've found a better deal, acquire a sample, leave it in a bucket of water and see what becomes of it.

John and his son Tom (JFJ Wood Flooring, North Molton, Devon) care. They care about their product, using only the best factories in



▲ Pic.3 Every child fresh with the joy of living finds treasure in stones and leaves and perfectly dried insects; in cards, ribbons and mementoes of special days. I think I'll make Jaya, my increasingly beautiful granddaughter, an empty box that one day she can fill with magic and mystery of her own



▲ Pic.2 Dickie laying the engineered flooring with the help of a nailing jig

China; not to save money but to raise quality, for there's nowhere that good in Britain. They care about their customers, resisting 'click to buy' on their website, and insisting on discussing the order to ensure that the specification will be appropriate. They care about the global environment. Materials are responsibly sourced, though they do not carry the normal label (John runs me through his objections to what he says is a money-making machine). And they care about their local environment. Needing to expand, they want to keep their business in North Molton, for the benefit of the community. Their plans involve ecological building.

Box from offcuts

All of this had me thinking. What a good furniture-making material this might be: all the quality of oak thick enough to receive some detail, and none of oak's (or any other solid timber's) propensity to move, buckle, split and otherwise distort. Did Dickie have any offcuts? He gave me an armful of short pieces and a couple of slightly longer ones.

The most obvious project was a box. A box could hide the ply inside, making the illusion of



▲ Pic.4 Creating the lap joint using the table saw

Home truths







▲ Pic.6 **Separating the feet**

WPB

John Fanthorpe adds: "WBP ply was always stocked in the past by builders merchants and was very high quality and exceptionally good for outside use. It was always stamped on the board with a WBP stamp. This type of plywood seems no longer available and in general has been replaced in builders merchants with a general purpose exterior ply. Most of this type of plywood is often manufactured in China. This is not in the same league as the old WBP ply and will delaminate when exposed to water in a very short time"

solid oak complete. But what sort of box: with what function? 21mm stock does not lend itself to a jewellery box, but it couldn't be too large as my offcuts were limited and I liked the idea of making something valuable from waste. In the old days I might have made a boot box for polish and brushes; a salt box, a candle or a bible box. None of these seem appropriate now. Instead, more enduring throughout the ages; timeless, eternal you might say is, aha! me hearties, a treasure chest. (Question 2: Why are pirates called pirates?) A treasure chest has a curved or faceted lid, pronounced metal reinforcement, secure hinging and strong locking (which might be a hasp and staple).

The basic joint is the lap (**Pic.4**). I took away most of the ply on the table saw with quards removed and please don't tell me that this is hazardous. Note the fingers far away from danger. Note the sliding fence taking most of the strain, and the little finger keeping the board in tight; and note the furrowed brow. Danger does not come from breaking rules but from not knowing what you're doing.

The rebate is cleaned up on the router table (Pic.5) using my favourite and still pristine large cutter, which is so much more satisfying and effective than a small one. But here comes mistake number one: I made the rebate a little deeper than necessary so that the oak lip could stand a fraction proud and be sanded back later. Next time I'll have more faith and make it

spot on so that my belt sander can stay where it belongs – out of sight. The spelched edge seen here was later given a fine chamfer on the same machine.

I thought that feet would enhance the box, literally taking it to another level (Pic.6). In the old days feet would have raised a box protectively above a damp floor. Here that is hardly necessary, but they still speak of extra value and extra care. I fiddled around with a piece of pine to get this right. The hole was smaller than I had anticipated so as to allow for rebates (yet to be cut) to sit up under the box. The 45° cut is dead centre, but the kerf results in the (slightly less than) semi-circle appearing higher in the foot – a serendipitous piece of geometry because that is what I wanted. I stayed away from more traditional ogee curves because I don't have a suitable bobbin sander at present. The hole is drilled with a Forstner bit and needs no further cleaning.

This being a prototype, it contained a gaggle of surprises. One was this little feather of ply that remained after the feet were separated. Thankfully it didn't take much to trim each of the eight feet components by exactly the same amount, just the judicial use of stops on the chop saw (Pic.7).

The feet are the main detail (Pic.8). They doff the cap to older, more elaborate designs but streamline and modernise them. They are also as simple to make as I could manage.

The order of construction was important. The box was straightforward: I screwed the four sides together and then fitted the floor, which held the box square, then I angled the upstands of the lid and screwed them to the sides. The top would prevent parallelogram shift just as the floor does, but it could not be fitted until the slopes were cut. The bottom angled edge of the slopes was easy enough to saw on the tilted table saw and clean up on the planer, but the top angled edge had to be marked off from the sides, the piece being held in place. (**Question 3:** what is the easiest way to arrive at a precise angle of 45, 22.5 or even 30°?) Only with both slopes held in place could the top be cut, but it was the top that would hold the lid square. It's a bit cart before horse, and the answer seemed to be to cramp across the diagonals of the lid to get it spot on; cramp the sides down against the box; fit the slopes, release the cramps and fit the top. Mmm. Even then it wasn't perfect, but it was good enough. This whole project was an exercise in extreme accuracy and identical repetition. I still have

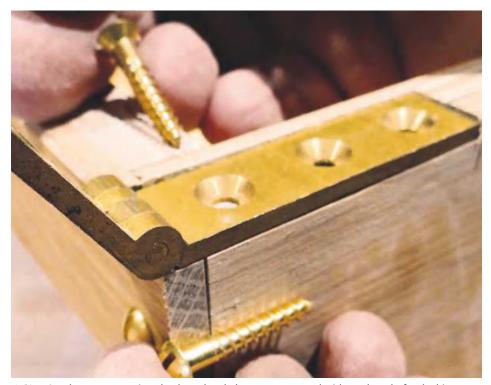


▲ Pic.7 Trimming the feet using the chop saw

Woodworker's journal



Pic.8 The feet are the main detail



▲ Pic.9 Another nasty surprise: the dome-headed screw was spaced without thought for the hinge screws, the first of which would have fouled it. Yes, I could put a smaller screw in here but only, um, if I had one. I mean two. I didn't. This is the value of prototypes

some way to go, but the first attempt was promising.

The real answer on a different box (and maybe on the next one) might be to make the box and lid as one piece and then gingerly saw them apart. It would have to be a very careful and good saw cut though, because you couldn't then clean it up on a planer without dismantling the whole affair.

A handsome hasp and staple

A long time ago, due to a couple of dramatic near-misses, I realised the need to sort out hinging and catching before the first piece of wood was cut. I patted myself on the back as I went through my storage box of decades-old brassware and found this handsome hasp and staple (Pic.10), a box of strap hinges and two

boxes of carrying handles, which I don't think I have ever used. (A carrying handle as opposed to a drawer handle stops when it is horizontal.) What I didn't have was 25mm dome-headed screws, and neither did my nearest emporium ('no-one wants them any more'). Thankfully the internet was more forthcoming.

Screwing into the ply for the small screws for the fittings was no fun. Drilling was easy enough but getting it just right wasn't. Too much clearance and the screw becomes ineffective; too little and it shears. I had a horrible hour, fearful of the screw that swivels on the final twist. One head snapped off and one shank broke buried deep in the ply. I had the leeway to move the hasp up a bit to avoid this wound but it was a close thing. Then, among my boxes and compartments of brass screws of all dimensions and declensions,



▲ Pic.10 An old storage box with a handsome hasp and staple

I could not find the ones I wanted. Nor, when I had assembled some candidates, could I find steel screws with which to ease the wood. Was I about to drive to a builders merchant or a superstore only to be disappointed again? Would I go back on the internet and order several boxes which would take a couple of days to appear? I won't honour those questions with an answer. I muddled through. Next time I'll be better prepared.

Next time is likely to involve another couple of boxes. I'm not sure what for. Jaya will probably not have that much treasure to store, but I have a pack of boards from [F] Wood Flooring gazing expectantly at me.

Saint Joseph

I'm not Catholic; I am not even Christian, but I have a soft spot for Saint Joseph (**Pic.11**). He is, after all, the patron saint of carpenters and, woodwork being sometimes a tricky occupation, all help is gratefully received. I am not superstitious and I don't believe in angels,

Home truths



▲ Pic.11 Saint Joseph, the patron saint of carpenters

Perhaps he has an inkling of the tumult excitement, fulfilment, and catastrophe – that he has initiated. Perhaps he hasn't. Either way he isn't swayed. He is constant, respectful, observing and guiet. This is the spirit I want in my workshop. GW

Furniture from engineered board

If you'd like to have a go at making furniture from engineered board, Tom will send you a pack of 'Supreme' oak; four boards 190 × 21 × 1,800mm, with free delivery for £64.03 inc VAT. The website shows more products - some are, pro rata, cheaper

Tel: 01598 740 197

Web: www.ifiwoodflooring.co.uk

of A4 paper

A3 By folding the corner of a piece

Az Because they 'Aaarh'

A1 WBP: 'Water and Boil Proof'



but there is something about him that makes me feel good. So when I came across a plaster statue of him four feet high, rescued from a burnt nunnery in Frome, Somerset and on sale in a junk shop for £17 (this was some time ago) I had no choice. He came home with me.

I washed his face, tidied up his hair and gave his clothes a coat of paint but I stopped short of over restoring him. He's a saint, not a gnome. I patched up his broken hand but his grasp is still frail. What he held is missing. It was probably a lily to symbolise his innocence, or lack of involvement in fathering Jesus. I bought him a tall artificial lily when, with no room in the workshop, he sat on my landing; but even artificial flowers fade and become funereal.

Since we've moved house, he's been in the

dining room, behind the door where, complete. Yesterday Dickie helped me carry him out to my workshop. Now he stands on a area behind the stove. I'd thought about his position, but when I put him where I'd planned he gazed solidly at the stove with a look of 'When are you going to

light it, then?' So, not wanting to be nagged, I shifted him round by a few degrees. He's not going to get another lily because lilies get dusty (and because the Gospels

indicate that he was the father of lesus). Instead he holds a silver topped cane which belonged to my grandfather. This is fitting because my grandfather was a cabinetmaker and all-round craftsman, and I'd appreciate his benediction too. You might call this hedging my bets, but I'd call it being broad-minded.

I don't expect miracles. What Joseph does is exude a quiet serenity, an unruffled calm. He looks down at what is; not up at what may be.

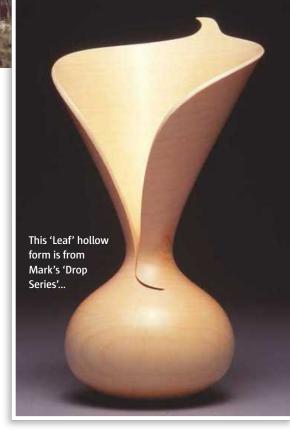
Profile



Look at that shaving! Mark Hancock at his lathe

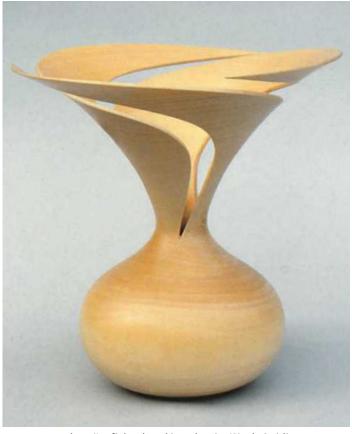
Function first

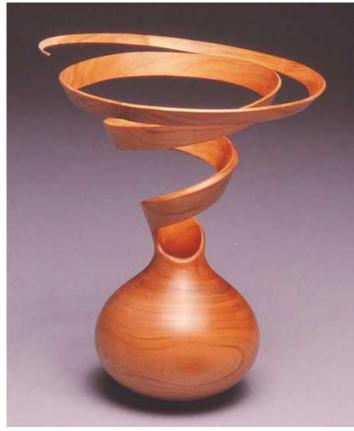
Why doesn't 'art' turning enjoy the same following in the UK as it does in the US? Andrea Hargreaves talks to sculptural turner Mark Hancock



Photograph by Artisan Media

Mark Hancock





... you can see how 'Leaf' developed into the airy 'Single Swirl'...

... and the space-defying 'Spiral'

ark Hancock was just back from a short break in Bruges, where he had also taken the opportunity of meeting up with someone who he'll be working with near Belgium's Venice of the north next year.

For the woodturner who made his name with his 'Drop Series' of hollow forms is now in the fortunate position of largely being able to choose what he does, whether that be tuition, workshops, turning functional items or something a bit more elaborate - while I would call much of his work art woodturning, he prefers not to use the term – and combining a little work with a lot of pleasure.

I refer to art woodturning in the United States, to which he used to contribute until a decade ago. "It's a different culture over here," he explains. "Generally British people have a traditional outlook on woodturning. They see it as functional ware, seen at craft fairs and the like." He regrets that only a few colleges are teaching the craft now whereas it wasn't so very long ago that schools would always teach woodwork in designated workshops. Now, unless youngsters had granddads with workshops they were unlikely to come into contact with woodturning or any other kind of woodwork come to that. "So they have very limited knowledge and don't go beyond turning things round."

He recalls a student who'd had some woodturning tuition but came to him because his tutor didn't seem to know what else you

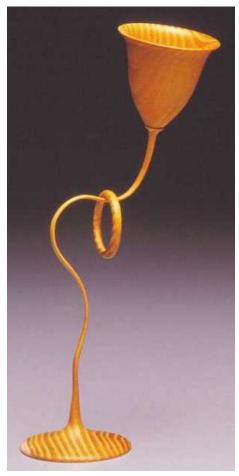
could do with turning, so no wonder then that public knowledge about more complex turning remains so limited.

Grumpy old man

Acknowledging that he's got to the "grumpy old man" stage of life, he adds: "The Crafts Council doesn't seem to know a great deal about wood. It's all ceramics, glass, jewellery and sculpture and very little wood. When they do, it's mixed with metal. There's better awareness in America without a doubt and helped by the Center for Art in Wood, formally the Woodturning Center, in Philadelphia promoting it. I went there in 2003. It's since grown tremendously and is a permanent venue which runs curated exhibitions and residencies. There's also the Collectors of Wood Art, where collectors get together. There's also a tax break for handing collections over to museums."

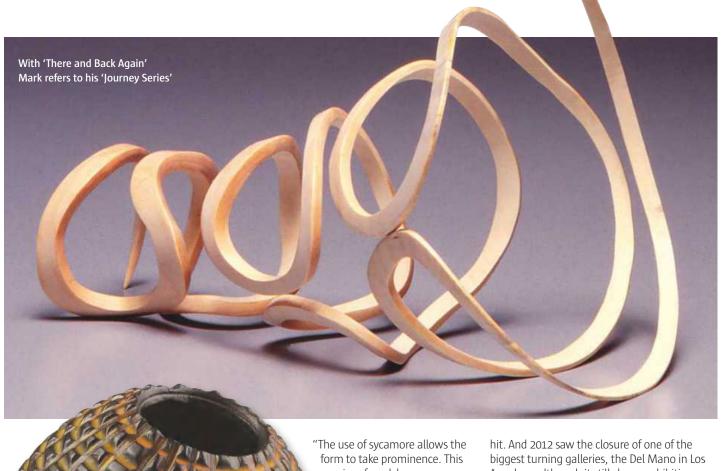
"And to be fair", he says, "the Americans respect the tradition which we in heritage-rich Britain have in spades, and are in awe of pole-lathe turners like Robin Wood."

When in 1989 Mark was faced with the choice of locating to Yorkshire with the firm he was working for as an accountant or taking off in a new direction, he decided to train as a turner. Encouraged by gaining second prize in the National Eisteddfod of Wales while still training – his tutor was awarded first place – he started specialising in high-quality turned decorative and functional bowls and individual vessels using simple designs to bring out the



'Memories of Philadelphia' is Mark's name for his crooked goblet with captive ring

Profile



'Rocking Vessel' incorporates hollowing, carving, ebonising and colouring techniques

natural beauty and variations in colour, texture and figuring of local timbers.

"My work is now more an exploration of line and form than an effort at an artistic statement and it continues to amaze me how each minute refinement of a curve can alter the character of a piece. I strive to achieve a perfect form – or at least something a little closer to it than anything I've done before. There is always further to go. This originally evolved to a series of work with hollow vessels based around a vase design with exaggerated rims that are partly removed and shaped. The inspiration for these came from the image of a falling drop of water, hence the 'Drop Series', with the incising giving each piece a sense of movement.

series of work became my trademark work. The Foreign & Commonwealth Office commissioned a piece from this series of work as gifts for the Foreign Ministers attending the Cardiff European Summit in 1998," he explains.

Sculptural forms

In 2003 he took part in an eight-week residency at the International Turning Exchange at Philadelphia, working with others selected from the international

community to focus on advanced technical innovations, aesthetics and techniques. "This experience had a profound effect and changed how I approached my work. Inspiration was drawn from other mediums and disciplines from outside the world of turning, leading to more sculptural forms. The use of pale timbers and colouring techniques made the form all the more important rather than how it was produced. Wood is still my choice of material to work with and initially turning the method of creating the form, but it is not always obvious. My move in 2005 to a larger studio in Worcestershire has helped this progression in my work with more space and light to aid this creative process."

Two years later and America was hit by the sub-prime mortgage crisis, which led to the saturated US turning market taking a bit of a

hit. And 2012 saw the closure of one of the biggest turning galleries, the Del Mano in Los Angeles – although it still shows exhibitions online. Nevertheless, thinks Mark, the turning market is probably stronger across the Atlantic.

But is he bothered? Not a bit. He's in the happy position of being able to make what he wants, whether that be abstract forms where the initial turning may constitute only 10% of the work, or functional plain vessels. "I'm still trying to develop my work. I've given up seeking kudos. If people want to buy it, I'll make it, and I'm happy to teach. I got into turning to get out of the rat race. I didn't want to become a machine working for someone else. Early this year I decided to concentrate more on lessons in my own workshop, and also teach at West Dean [in West Sussex] and at Warwickshire College. I'm thinking of doing some work for UK galleries, but very few gallery owners are clued up about wood. I just like making pieces that please me." And for most of us that last sentence is surely what it is all about. GW

Contacts

Mark Hancock:

www.markhancock.co.uk

Center for Art in Wood:

www.centerforartinwood.org

Collectors of Wood Art:

www.collectorsofwoodart.org

Del Mano Gallery:

www.delmano.com

Robin Wood:

www.robin-wood.co.uk



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Maggie's Oxford Centre

In response to the wooded site, the concept of this design is based around a tree house, supported on stilts with a faceted, angular geometry, which maximises the relationship between the inside spaces and its natural wildlife setting

Inspired by the concept of a tree house, the Maggie's Oxford Centre, which offers free, practical, emotional and social suppor for people with cancer and their family and friends, floats among the trees on the edge of the Churchill Hospital, Oxford. The building's structure is entirely fabricated from engineered timber and utilises a range of crossply laminated timber materials. This combination enables the building to appear to float above the ground towards the tree canopies.

The CLT panel floor supported on glulam beams forms the elevated base of the building and provides a robust perimeter edge for the connection of level access balconies and the timber clad pedestrian

bridge to the road. A folding three-dimensional lightweight roof fabricated using Kerto LVL structural ribs and wrapped with a Kerto skin, extends seamlessly throughout the building, sailing over the external balconies to provide shelter or shade.

The building's external fabric is also wrapped in pressure treated Kerto sheeting, finished with a semi-translucent silver/grey solignum stain, exposing the grain of the timber while offering further protection from the environment. The colour reflects the natural weather of the spruce, which will silver to sit comfortably within the landscape. This treatment also marries with the unfinished solid oak trellis, providing privacy and shading to the large expanses of glazing.

Maggie's Oxford

Fact file

Structural engineer: Alan Baxter

Main contractor/builder: Jackson's

MEP engineers: KJ Tait Engineers

Wood supplier: Merk Timber

Client/owner: Maggie's

Wood species: Norway spruce, white fir,





The architect – Wilkinson Eyre

Chris Wilkinson founded the practice in 1983 in order to explore new directions in architecture, and together with Jim Eyre has established it as a leading force in the design world. His approach has best been described in the practice monograph 'Bridging Art & Science' where equal emphasis is given to conceptual creative innovation as it is to detailed technical design.

'Our design encapsulates the philosophy and principles on which the Maggie's Centres are based – the tree house concept maximises the relationship between the internal space and the external landscape offering discreet spaces for relaxation, information and therapy. It will provide a sympathetic and caring retreat, in tune with its surroundings." Chris Wilkinson of Wilkinson Eyre



Maggie Keswick Jencks

of dying." To find out more, see www.maggiescentres.org







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The Japanese woodworking tradition: part 3



oints & ideas

s this is the final article in this mini review of Japanese woodwork, I am going to show a few of the Japanese joints and ideas that I have found interesting over the years. Most of my workshop illustrations are of demonstration pieces, but these joints could easily be used in projects or as skill-building exercises.

Early inspiration

It all began with Alan Peters' book Cabinetmaking, The Professional Approach. This was published in 1984 and has images of his Oriental-inspired furniture. Yes, he has included Korean and Chinese as well as Japanese furniture, but in those pre-internet days, images of any Oriental inspired furniture were welcome, be they Korean, Chinese or Japanese. Pic.1 shows a small table made by him, which has rounded edges and mitred

▶ Pic.1 A table by Alan Peters using Oriental style mitred joints and Gothic arches, circa 1976, now in the V&A Museum. This shows how both cultural and historical influences are still relevant to today's makers

Photograph courtesy of Alan Peters' OBE Estate and Stobart Davies Publishers

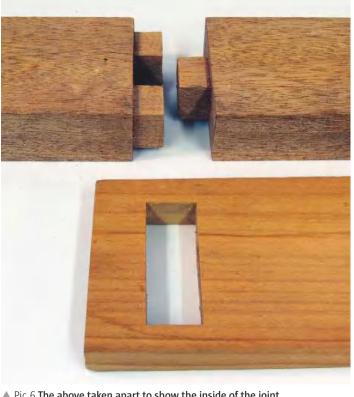


Japanese joinery



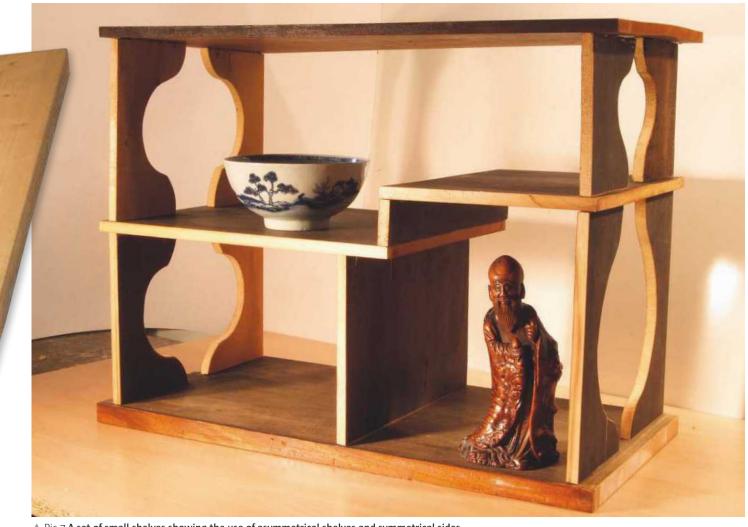
▲ Pic.4 Detail from another angle





▲ Pic.6 The above taken apart to show the inside of the joint

The Japanese woodworking tradition: part 3



▲ Pic.7 A set of small shelves showing the use of asymmetrical shelves and symmetrical sides

corners, all influenced by a recent Oriental study tour he undertook. His book is still a design resource for those interested in the Oriental style and is an introduction to how 2,000-year-old Oriental woodwork can inspire the present age.

loints

One of the most useful Oriental ideas is the through tenon on a mitred table top cleat Pics.2, 3 and 4 show the idea roughed out. The central boards float in a groove and the long sides are tenoned into the end cleats. The tenon is widened for a short distance to help resist any twisting motion. You can also include a 'locking' wedged tenon on the corner leg, which would hold the mortised cleat in position. Remember that the purpose of many of these mechanical joints is to aid disassembly so that the item can be repaired. In hot, damp climates, animal glues became soft so joints had to be mechanical rather than simple glue joints. In today's terms, a table made with modern, non-reversible glues, that has shrunk, is very hard to repair.

Shelves

Pics.5 and 6 show the way in which a vertical member appears to 'pass through' a shelf. Having the shelf appearing to enclose the upright gives a more pleasing and 'finished' appearance to the structure. **Pic.7** shows a completed shelf, which uses asymmetry to give a pleasing appearance. The shapes at the sides are based on double gourds. Just like in Western decoration, shapes from nature are used, but unlike Art Nouveau, and oddly because Art Nouveau developed as a result of an interest in Oriental art, there is a juxtaposition between the symmetrical sides of the cut-out gourd shapes and the asymmetry of the shelf heights and widths.



▲ Pic.8 Two practice scarf or bird's mouth joints useful for sawing practice



▲ Pic.9 The joints pulled apart. This is a joint that can be used for making long boat hook poles, so I am told!

Japanese joinery



▲ Pic.10 A table base with interlocking joints. The big, flat surfaces would make this very strong if the long-grain mating surfaces were glued and pegged, although that was not the original design concept

Getting this balance of asymmetry and symmetry right is the hardest part of understanding Oriental design. There is no formula; you just have to immerse yourself in previous examples of good design. This is why students used to be taken to museums and told to draw the exhibits. There is still a place for pencil and paper!

Sawing practice

There is a scarf joint (**Pics.8** & **9**) that you probably won't use in furniture but which offers some good sawing practice. Both these examples are in scrap wood: the thinner piece has an old biscuit joint slot in it, which is nothing to do with the scarf. Using scrap wood means that you relax and are not afraid of messing up expensive timber; it is a good way to warm up at the beginning of the session. There is not space to show you the full process here but you can view it online: www.youtube.com/ watch?v=GFqqpGE90jE. A good tip is to name each face with a different letter or number; that way you can see where you are!

Table base

This is a low table base design that can be taken apart. The long rails are bridle jointed into the legs and go right through (**Pic.10**). The short rails are notched (**Pic.11**) and lock the long rails in place. The flat top then sits on dowels and locks the under-frame rectangle together. It is a useful way of making a quick table base without resorting to mortises. Saw and chisel are all you need. Of course, a mortise & tenon joint is neater and better, but if you are a beginner, then this construction will get you making furniture on day one. It can also be beefed up with half-lap rails to make a base for your first bench. Gluing and pegging would make it more robust, but is not essential for a first coffee table.



▲ Pic.11 End rail removed to show construction

Further research resources

This may appear long and boring but it is the result of many years of studying Japanese woodwork. Listed are my comments on each title and looking at the links should give you a thorough introduction to the subject

Books

Anything by Toshio Odate! Look at his website – www.toshioodate.com - and any of his books are 'must-haves'

Ecke, Gustav; Chinese Domestic Furniture in Photographs and Measured Drawings; Dover reprint, 2000

Essential if you want to understand Oriental furniture construction

Yaqi, Koji; A Japanese Touch for Your Home; Kodansha, 1982 A bit of a coffee table book but has some good ideas and lots of pictures

Seike, K; The Art of Japanese Joinery, Weatherhill, 1977 English language with drawings, text and pictures but mainly architectural commentary

Nakahara, Yasuo; The Complete Book of Japanese Joinery, Hartley & Marks, 1997

A good introductory book. Look at the Amazon page and many more Japanese woodworking books will come up

Sumiyoshi, T & Matsui, G; Wood Joints in Classical Japanese Architecture, Kaiima Institute. 1990

This can be found as a downloadable PDF online. Very useful if you want to understand the construction and physics of architectural joints. Some say that these joints are unnecessarily complicated in the modern age, but to a student of woodwork and tool use, they are very relevant. It is also said that computers have replaced setting out roof geometry by hand, but what a poor place the world would be if none of our carpenters could do now what the medieval carpenters did then

Learn the Basics of Woodworking - ISBN: 978-4-07-263047-1 This is a 95-page Japanese college course textbook in Japanese but has some useful drawings and pictures. Search by the ISBN not the English title to find it. There are Japanese bookshops in London that can source it

Daiku no tsugi, Woodworker's Joints – ISBN: 978-4-8445-8536-7 A Japanese book with 126 pages of line drawings and photographs, captions are all in Japanese, but the drawings are self explanatory. I use this book a lot

Searching the internet for Japanese books – for those who are seriously interested in Japanese woodwork and culture there is a specific Japanese search engine called e-hon (translated 'e-book') at www.e-hon.ne.jp/ bec/EB/Top. Although the page is in Japanese, the search box is obvious. Type in an ISBN and the book will come up. You can then order it through www.amazon.jp or a UK bookshop, such as www.jpbooks.co.uk

Internet

There is masses of stuff on the internet, but here are some links that I found interesting

Begin Japanology – this is a television series that has been 'published' on the internet. It deals with many different Japanese subjects but there are several woodworking episodes. One of the best is 'Sashimono Woodwork' which aired on 10 March 2011. The entire episode list can be found at www.thetvdb.com/?tab=seasonall&id=165591

www.pinterest.com/explore/japanese-joinery

www.daikudojo.org

www.fabulalignarius.wordpress.com

www.thecarpentryway.blogspot.co.uk

The last two have links to other interesting internet blogs and titles. I could go on with this bibliography, but I have to stop somewhere! I hope you have enjoyed this brief series and that these links will help you take the study of Japanese woodwork further



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Under lock and key

Greg Stringer shows us how he went about making a keepsake box for his granddaughter, complete with lock and key

their mother, had a beautiful keepsake box that she had purchased many years back. The oldest granddaughter, who is 16 years old, had long admired that box, so I thought I would attempt to make one for her and present it to her at Christmas. This was my first attempt at box making. Once I knew the materials needed for construction, I decided 305 × 305mm would be large enough and adding the keyed lock would keep prying younger siblings out.

There is a lot of satisfaction in giving something that you have made from raw materials.



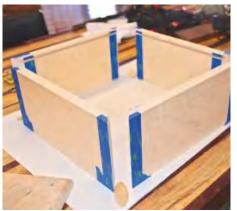
▲ Pic.1 I sourced these locks from Warwick on a recent trip to the UK

Granddaughter's keepsake box





▲ Pic.3 For this project I decided to use a tiger maple board, which measured 1,524 × 125 × 20mm. I cut four pieces measuring 305mm long with 45° corners. So the grain pattern could be followed as you turn the box, I marked each of the four sides with directional arrows. Next, I cut a slot 3mm from the top of each piece, 7mm wide and 6mm deep, which would accommodate the walnut lid section. I wanted the lid to float in the slots for wood movement so no glue was used on the walnut



▲ Pic.4 Each 305mm maple piece also has two No.20 wood biscuits glued for strength in the end-grain of the 45°



■ Pic.5 This walnut slab made a great lid. I cut out enough for a 254 × 264 × 16mm square, planed it flat and ran it through the table saw on end, to create a 3mm wide × 12mm deep mortise slot all the way round. That still left 6mm of wood top and bottom of the slot. This fit just right in the 7mm slot around the top of the maple carcass. I then routed out a 100 × 100mm square in the centre for the later ceramic tile. Then using a chamfer bit, took off the upper edge on all four sides of the walnut



▲ Pic.6 Once the sides and walnut top were clamped together, I let it sit so the glue would dry overnight. But again, no glue was touching the walnut, just the four sides



▲ Pic.7 For the box bottom I took two pieces of 180 × 180 × 20mm Ambrosia maple boards and glued them together using four No.20 biscuits



▲ Pic.8 I sanded it dead flat, put it on the table saw and cut it down to a 330 × 330mm square and again using a chamfer bit, took off one edge. Using No.20 biscuits as before, I glued the carcass to the bottom



▲ Pic.9 After the glue had set, I ran the box on its four sides through the table saw, 25mm from the top to release the lid from the carcass. Now there were two pieces

Project



▲ Pic.10 After determining which side would be the front, I started cutting out for the half mortise lock and key hole



▲ Pic.11 I laid the back of the lock flat against the inside centre and top edge, marked it, routed it with a straight bit, followed by a small chisel to square the corners. The lock fit snuggly



▲ Pic.12 Using a piece of wenge would highlight the key hole and the brass escutcheon. Using a bandsaw, I cut the diamond shape so it measured 50mm wide × 38mm high



▲ Pic.13 Because the piece was so small, I attached it to a larger board, then ran it through the table saw for the bevel on the edge side



▲ Pic.14 I used the drill press to cut out three 10mm holes. Using small files, I enlarged these into the shape of the brass keyhole escutcheon



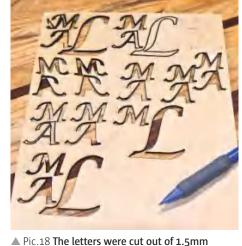
▲ Pic.15 The brass escutcheon is slightly tapered from the front narrowing to the back. After much filing, I finally got a tight fit



▲ Pic.16 Next, I glued the wenge and brass escutcheon combination over the keyhole, on the box front, and left it for 24 hours



▲ Pic.17 For the lid part of the lock, where the upper plate goes that the lock grabs, I put the upper plate in the lock and locked it. That left the flat part of the plate pointing up. Then marking that piece with chalk, I set the lid back down on the plate and gave it a tap. After raising the lid, the chalk mark showed exactly where I had to cut out the lid portion for the upper plate to be inserted. Using a 3mm straight-fluted bit, I carefully routed out the hole for the upper plate, again chiselling out the inside corners, ensuring



maple plywood by a local company that uses a laser. The cost was minimal for the laser cutting and cutting the 1.5mm deep holes in the lid to

match the inlaid



▲ Pic.19 Once completed, I epoxied the ceramic tile in place and added weight to ensure a good bond. I applied three coats of an oil PU finish, inside and out, using 600 grit paper between sandings. I let each coat dry for two days between sanding

the plate sat flat and flush in the lid. After test fitting the locked box lid, I screwed in the upper plate. A word of caution: brass screws are soft; the heads can easily twist off in hardwoods if the hole is too tight. Always pre-drill your holes and use a steel screw of the same size to check for fit. Remove the steel screw and scrape a little candle wax on the brass screw threads before tightening down



The completed box is now ready to be passed on to its new owner

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Profile











Les' inlay process

Les Lively's heirloom quality furniture

escribing himself as a 'veteran woodworking artist', furniture maker Les Lively's passion for handcrafting custom furniture and accessories is **clear to see.** Not content with producing many of the same item, but rather choosing to keep his pieces unique and 'one-of-a-kind', Les gets his kicks from selling his work to individuals who truly appreciate artistic furniture. He is disheartened by the proliferation of inexpensive, dispensable furniture available nowadays, with no regard for quality or craftsmanship: "I want to make furniture that will be considered heirloom, and can

Having discovered that this maker is entirely self-taught, Les informs me that he first became exposed to woodworking when he was at high school back in the 1960s: "It immediately became my favourite class," he says. "I was drawn to its challenges, the rewards of working with my hands. and the entire creative process. I soon discovered that I not only loved working with wood, but I also seemed to have a natural talent and an eye for design."

Creative process

Once he left school, Les only discovered furniture making again out of necessity. After graduating, he lived with a group of young men and they had no furniture this was before the likes of IKEA and

competitively priced flat-pack furniture was available, so Les started making his own tables and beds out of 2×4 scrap pieces of wood: "I always enjoyed the creative process, and this gave me the outlet to do that," he comments. Since then, he has designed and built a variety of things, including bread boards, rolling pins, game boards, boxes, dressers, beds, and tables. "My work has evolved from the basic, functional pieces to much more elaborate and artistic. but still functional. work. When I build furniture, I know that it will be of the highest quality and proudly displayed in someone's home."

Before becoming a furniture maker, however, Les worked as a residential construction contractor, so he has always worked with his hands. Occasionally he still finds himself remodelling a home, and says that the same creative process still applies and in this

'Craftsman Style Side Table'. The inspiration for this side table came from the wheat fields of eastern Washington, where Les grew up. The top inlay is fashioned in the tradition of the Arts & Crafts movement and is representative of a sheaf of wheat. Made using maple, Peruvian walnut, purpleheart, yellowheart, Osage orange, wenge, zebrawood and lacewood - 470 × 734 × 660mm

situation, he calls upon his ability to envision the possibilities. He always practised furniture making in his spare time, but it's only been recently, as he gets close to retirement age, that he's had the time to concentrate solely on making furniture and other artistic pieces.

This maker's creative talents don't just stop here, though: he tells me he's always been interested in music as well, having played the guitar, drums and a little bit of keyboard

throughout the years: "I've played the guitar almost as long as I have been working with wood – it is what I do with my hands when I need a break from woodworking." Les doesn't read music, he just plays by ear and can spend hours on the guitar, which is just another one of his creative outlets.

When asked how being a self-taught furniture maker/artisan shapes his designs, Les tells me that he has a creative eye: all he has to do is











Profile



'Side Table With Drawer'. This distinctive side table with a front drawer has double dovetail joints and beautifully curved legs. Geometric inlay is on four corners of the table top. Made in maple, cherry and exotic hardwoods - 279 × 635 × 101mm

look at a piece of wood and sometimes he can automatically envision what it can become what a great skill! This can be any number of things, from the particular grain of the wood to deciding if its unique characteristics can be

complemented if used correctly. "Being self-taught has involved a lot of practice, many years of experience, and learning creative ways to turn the inevitable mistakes into a new discovery," he explains.



'Granite Topped Plant Stand', featuring a geometric design, aluminium accents to a modern flare and the granite top, which is perfect for plants. Made in cherry, maple and wenge - 330 × 330 × 673mm



Inspiration

Just looking at his pieces you automatically get a feeling that this maker has a love of Art Deco, Art Nouveau, Arts & Crafts as well as modern design, but Les is very clever in that he tries to fuse all of these styles together to produce something that is truly unique: "The designs of the Art Deco craftsmen have always intrigued and inspired me. I have always admired Gustav Stickley - furniture designer, architect, and leader of the Arts & Crafts Movement in America." Stickley's furniture reflected his ideals of simplicity, honesty in construction, and truth to materials. Unadorned, plain surfaces were enlivened by the careful application of colourants so as not to obscure the grain of the wood and mortise & tenon joinery was exposed to emphasise the piece's structural qualities.

The international Arts & Crafts movement in the decorative and fine arts stood for traditional craftsmanship using simple forms, often calling upon folk styles of decoration. This style emerged from the attempt to reform design and decoration and the reaction against contemporary styles that the reformers associated with machine-production, which were ornate, artificial and ignored the qualities of the materials used. Art Nouveau furniture was popular in the late 19th century, and its designs were usually very complex, with curving shapes that were expensive to make. It was inspired by natural forms and structures, not only in flowers and plants, but also in its curved lines.

Les says he finds it hard to classify his exact style as the pieces he produces are born out of a free-form design, influenced by Art Deco and the Arts & Crafts traditions, with a bit of a modern twist thrown it. "In my work I strive to combine both the quality of Stickley along with some Art Deco flourishes in my inlay work and curving lines." In short, his work is a hybrid of a number of different eras.

Natural surroundings

Les lives in the Hood River region of Oregon. a scenic and historical area known for its beautifully detailed Craftsman-style homes, many of which date back to the 1920s. He says that living in such a visually stunning area gives him inspiration, some of which is reflected in his inlay designs: "One of my tables has inlay that is representative of a sheaf of wheat, a homage to the wheat fields of eastern Oregon and Washington, where I grew up. Many of my inlay designs look geometric, but represent my abstract impressions of the beauty surrounding me."

Design process

When asked how he goes about deciding upon a design, Les says that he usually draws something first, before experimenting with different designs, then finally searching for the appropriate piece of wood: "I will spend a lot of time drawing, but it is not unusual for me to



Les Lively's heirloom quality furniture

change the design slightly once I start actually cutting into the wood, revealing its character. But if I see a particular piece of wood that has distinctive characteristics, or unusual markings, it will inspire me to create a piece that showcases its particular beauty."

As he explains above, when looking for potential pieces of timber for his projects, Les always looks for the wood which has the most beautiful grain, along with prominent colouring and patterns: "Occasionally I'll find discarded wood, or pieces that have defects. It's very satisfying when I can discover beauty in those flaws and turn them into a work of art."

Les says that when designing a piece, he prefers to trust his creative process and eye for design, but will certainly work with someone to create a special piece for their home, reflecting

'Floating Top Side Table'. The illusion of a floating top is created with copper pieces set under the top. Delicate inlay surrounds the edges and follows the graceful curves of the legs. The table top has been bookended to create a stunning image. Made using cherry, walnut, maple and exotic hardwoods - 457 × 457 × 635mm

their style as well as their budget: "I will communicate closely with clients to ensure their satisfaction. Many of my clients are inspired by a particular piece of furniture that I've already made, so that's a good starting point."

Les says that he's recently finished a very unique side table for a show entitled 'The Best of The Gorge', which will be held at the Columbia Center for the Arts Gallery in Hood River, Oregon. He's now getting ready for another show at the same gallery, which will focus on smaller items for the home, such as bread boards, cutting boards, rolling pins and other functional but beautifully crafted items: "I just acquired a beautiful piece of bubinga that will soon become a side table. Bubinga is sometimes known as African rosewood, which varies in colour from pinkish-mauve to golden blondes and oxidises beautifully to rich darker tones over time. Bubinga features a host of stunning grain figures, such as flamed, pommele and waterfall, which helps to make this wood truly unique."

When making a piece, Les says it's extremely important for him to preserve the integrity of the wood, using the highest quality products and giving great attention to every detail to create heirloom-quality furniture. As a result, he doesn't use any stains, but rather depends on the natural colour variations in the wood and distinctive grain patterns to contribute to the design. "There is such a natural beauty to wood that should be highlighted in each piece you make," he comments.

Working space

Les' workshop takes up the entire basement of his home and is kitted out with all the





Profile





'Zenith' side table - won Honourable Mention in the '2015 Best of the Gorge' competition through the Columbia Center for the Arts. Truly a stunning piece of work!







necessary equipment and lots of wood. He keeps all the leftover wood scraps as he always tries to use these for his inlays, utilising as much of the natural resource as he possibly can. When asked about his favourite tool. Les told me that he couldn't pick just one as all are so important in helping him to create the finished product. When working on his pieces, the time it takes to complete one very much depends on the size of the piece, with some taking anywhere from 2-4 weeks to finish: "Since my workshop is in my home, I tend to spend very long days working on them. The process can be exhaustive, requiring a steady hand and lots of patience, but it is so rewarding and I love doing it!"

When he is producing his inlays, everything is cut with routers and a scrollsaw, but all the sanding and finishing is done by hand: "The hand work definitely takes a lot of time, since everything has to be sanded and hand rubbed multiple times to achieve a glass-smooth finish," he tells me.

Award-winning pieces

Unsurprisingly, Les' stunning pieces have won their fair share of awards over the years, most notably his 'Zenith' side table, which won Honourable Mention in 'The Best of the Gorge' at the Columbia Center for the Arts. The gallery hosts this two-month art show celebrating the best artwork produced by mid-Columbia River Gorge residents, an annual event that brings visitors from around the world to experience some of the finest art in the region. Les' table was chosen for its uniqueness, the quality of the woodwork, and its graceful lines, with the materials used being cherry, maple, wenge, walnut, yellowheart and purpleheart.

In terms of the piece he is most proud of, that would have to be his large dresser, made entirely of solid wood - one of the most challenging pieces he has ever made: "All the runners are wood, and it required precision and exact cuts to make everything fit perfectly. I love a challenge, and the sense of accomplishment I feel when a piece is finished." In terms of his plans for the future, Les wants to continue perfecting his craft, always striving to learn new skills while increasing his client base so more people can enjoy his fine furniture.

As far as tips for the readers qo, Les says that unfortunately, there are no secrets or short cuts – producing fine furniture takes a lot of patience, a lot of practice, precision, as well as a lot of years of experience, but as he has shown here, the sheer joy he gets from producing such pieces cannot be ignored and surely that is a great message for any maker to take away. GW

Further info

To see more examples of Les' wonderful work, visit his website: www.livelyfinefurniture.com

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CNC routing



Dennis by his CNC router, using the hand-held controller

The CNC has become the next musthave piece of workshop equipment. It was during my recent college course of furniture design that I became aware of how the furniture industry has radically changed over the last 20 years by incorporating Computer Numerically Controlled (CNC) machines into production. I became bitten by the CNC bug and after finishing the course, I purchased my own CNC router. I quickly realised that I was not alone in buying a CNC for personal use – there are thousands of hobbyists now buying them. Just look at the range of very affordable CNC machines available on eBay. Pic.1 shows the small CNC that I purchased from China.

No limits

So what can you do on a CNC router? Well, pretty much anything, depending on the size and functionality of your machine. The CNC router is used for machining flat sheet material. IKEA has been using them for years to make its flat-pack furniture. They are used extensively for engraving, carving, clock making and cabinetmaking. Hobbyists normally start with a small desktop machine that will cut up to A4 size. My current machine cuts up to 600mm square. **Pics.2-7** show some of the things I have recently made on my CNC router to give you an idea.

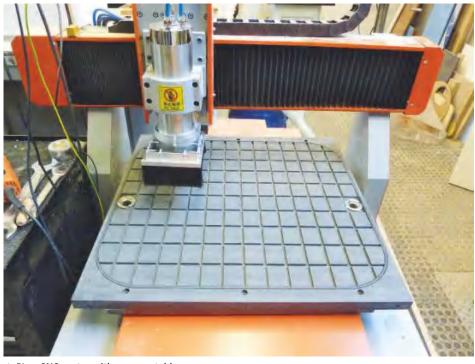
Basically, the CNC router uses a traditional router cutter mounted on a frame that is controlled by a computer. The router is controlled to move left and right (X axis), towards the top and bottom (Y axis) and up and down (Z axis). There is no need to understand computer programming or to buy expensive software to use a CNC router; digital designs are available for download on the internet and simple control software can be found free of charge.

Making a desk-tidy

To give you an idea of how easy it is, I will show you how I designed and made this simple desk-tidy (Pic.8). I sketched the design of the desk-tidy using a simple Computer Aided Design (CAD) package like Sketchup. I wanted to use mortise joints but these are not straightforward to cut with a round router cutter – you can't get a clean 90° internal corner. A simple way would have been to clean the corners up with a chisel after machining, but I chose a more elegant method requiring no finishing. By using a very thin router cutter, 2mm diameter, a sharp internal corner can be created by slightly over-cutting the corner (Pic.9).

Once the components have been designed they are 'nested' together in the CAD system, ready for machining together. Unfortunately the digital output from CAD systems will not

Using a personal CNC router

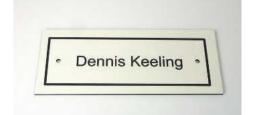




▲ Pic.1 CNC router with vacuum table



■ Pic.3 Corian jewellery box



◆ Pic.5 Engraved nameplate



drive the CNC; it has to be modified in another piece of software called a Computer Aided Manufacturing (CAM) package. This program converts the digital CAD file into G-Code to drive the CNC. It also enables the type of router cutter to be specified, its feed rate, spindle speed and the thickness of the material to be cut. I found an excellent low-cost British CAM package, which also allows you to do basic CAD design in it as well ArtCAM Express from Delcam – which costs less that £100.

Materials required

For this project I used flooring board – opepe – a West African Hardwood, but you could use plywood. I cut it to

thickness on the bandsaw and then sanded it to size on the drum sander. The various profiles are set up in the CAM software. One profile for the internal slots, another for the slot for the base, and finally a profile for cutting the outsides. Small bridges are incorporated in the cutting path to retain the piece after cutting, which saves it from flying off and being caught in the router.

Equipment required

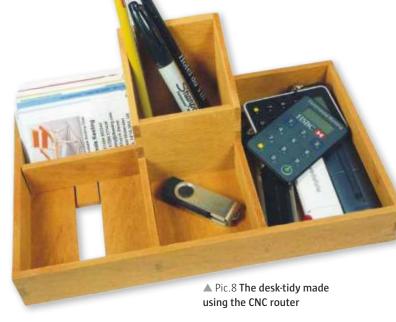
▲ Pic.4 Small step-stool

Ordinary tungsten-tipped router cutters can be used with a CNC for wood machining, but for small diameters, like the 2mm cutter used in this project, it's better to use a solid carbide cutter. I'm using a slot-profile cutter for this project. For engraving you would use a fine point cutter and for carving, a round head

CNC routing



▲ Pic.7 Hand mirror



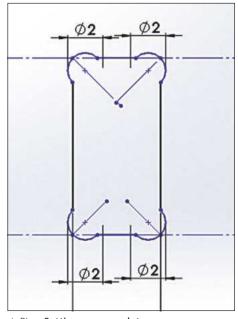
cutter. The size of router cutter and the material to be machined will determine the feed rate of the cutter. If it's too fast you will break the cutter; if it's too slow, you will burn the wood. In this example, I'm using a feed rate of 600mm/min and a spindle speed of 15,000rpm.

When all the cutting profiles have been determined, the details are saved and output in a special format, G-Code, for your CNC. The CNC usually has its own control software to

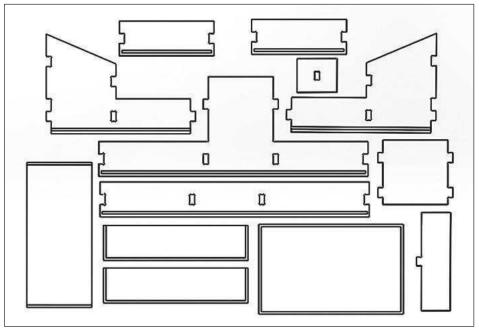
ready this code. Mine uses the popular Mach3 system, which is very easy to use and has an excellent support forum. It is this software that receives the G-Code and converts it into movement. It is linked to my computer with a USB port and my computer takes over the control of my CNC (Pic.12).

Various methods

There are several methods of using the CNC control software: either by manually jogging the



▲ Pic.9 Cutting a square slot with a router cutter

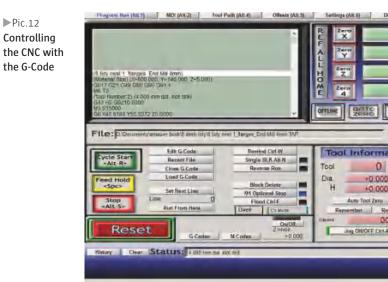


▲ Pic.10 CAD design of the desk-tidy nested for cutting on the CNC

▶Pic.12



▲ Pic.11 CAM set-up of tool-paths to machine the components



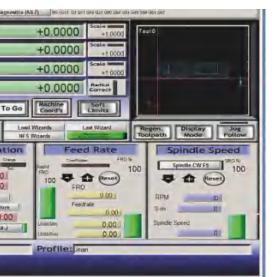
▲ Pic.13 Positioning the router cutter on the top of the left-hand corner of the work



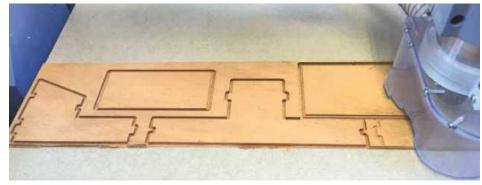
▲ Pic.15 Dry fitting the sides to the base

cutter around the table; by directly inputting specific commands; or by reading in a preprepared file. I used the jogging function to set up the start position for the cutter and the G-Code file to machine the desk-tidy.

The material is fixed to the bed of the CNC – in my case using a vacuum table and hot-melt glue – but in most cases, with clamp-down levers. The router cutter is positioned on the start position, usually the bottom left-hand corner on the top of the material. The router cutter is then lowered to just touch the top of the material and all the axes are then zeroed. The G-Code file can now be activated and machining can begin (**Pic.13**).



Using a personal CNC router



▲ Pic.14 Machining parts of the desk-tidy



▲ Pic.16 Gluing up the desk-tidy

▲ Pic.17 The completed desk-tidy after sanding and a coat of lacquer spray

Cutting material with the CNC is a very precise function – it's mesmerising to watch this fine cutter profile the components without manual intervention. A sawdust extractor cover has been fitted to the router body and connected to the workshop extraction system (**Pic.14**).

Once the cutting has finished, the bridges that hold the components in place are cut through – care must be exercised here as the components can easily be broken. I use an oscillating saw to cut through the bridges.

Assembly

The desk-tidy can now be assembled no nails no screws, just accurate woodworking! Some edges may need sanding. It's best to dry assemble it all first to check that

everything fits together (Pic.15). I use a small amount of clear-drying PVA glue for final assembly (Pic.16)

When fully assembled and alued the finished desk-tidy should look something like this (Pic.17). I have given it a couple of coats of acrylic semi-gloss lacquer to protect it from dirt and finger marks.

The beauty of this process is

that it is repeatable – to the same high degree of accuracy each time. If you want to make several items the same, it's ideal. The time is spent in the design and set-up; the

Dennis' book

At college I found it very difficult for the amateur to find any easy to understand books on how to use the CNC router, so I wrote my own. This desk-tidy is one of the projects outlined in detail in my book, which can be purchased on Amazon - www.amazon.co.uk - for £10.66. The book takes you through all the basics one needs to know to use a CNC router. My second book features clock making using the CNC, but that's another story!



Skeleton clock made using Perspex



Good oodworking

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David Colwell's 'Xtable' in steam-bent ash Photograph courtesy of www makerseve coluk

Steam-bending

I am making a steamer box to bend a chair comb and wonder whether I can make it from 15mm chipboard. Are you able to help, please? Regards.

David Williams

David, I would ask James Mursell at The Windsor Workshop – james@thewindsorworkshop.co.uk. He is the king of Windsor chairs and steam-bending. My feeling is that it is a bit thin, but might do for single use only. Perhaps line it to protect it? Although it is better to get decent water and boil-proof ply: 18mm or 25mm.

Michael Huntley



The power of information

As an amateur woodworker, in my final school report, my woodwork teacher said: "Paul should never be left alone with any types of woodworking tools." I'm always looking for help in learning to work with wood so I'm constantly scouring the web, magazines and books for inspiration. I came across a woodworking website

where the site members berated an amateur woodworker who posted to the board that he had learnt a lot from the programme New Yankee Workshop. In fact some of the comments were quite disturbing and left me wondering if the members were teenagers. My point is, no matter where inspiration or learning new techniques comes from, as long as the information is correct, then surely it is of benefit to anyone who works with wood?



My disability prevents me from spending day after day woodworking and I have to go back and brush up with magazines, books and all those New Yankee Workshop episodes that fill up my TiVo. Take inspiration and knowledge from anywhere; never ignore anything or anyone!

Paul Churchward

Paul, what you say is so true and it's a shame that sometimes the woodworking community is not as helpful and supportive as it should be, but you seem to have the correct attitude and realise the importance and value of learning. Embrace all the possible avenues you can and strive to develop your skills. Good luck!

Tegan Foley

Don't try this at home!

I was sent this photo by a friend. This is the result of not holding a workpiece properly when drilling into it. Apart from the obvious pain, there is tendon, muscle and bone damage. It is so easy, unless you are aware of the horrific injuries that are possible, to think "oh, I'll just hold

this and drill it." I know we staff writers keep banging on about safety, but this is why! NEVER drill anything that is not properly secured and NEVER work towards your or anyone else's body or limbs.

Michael Huntley

While I don't want to repulse readers with graphic images such as this one, sometimes

seeing such an image has the desired effect of shocking you into realising that accidents DO happen! So as Michael says, please always exercise extreme caution when you are in your workshops, and always take health and safety very seriously, otherwise you may end up like this poor chap, who, Michael informs me, took three months to recover.

Tegan Foley

WRITE & WIN!

We always love hearing about your projects, ideas, hints and tips, and/or like to receive feedback about GW's features, so do



drop us a line – you never know, you might win our great Letter of the Month prize, currently a Trend Snappy Colour Ring bit set. Write to the address on the left for a chance to enhance vour marking capability with this versatile workshop aid



Large dining table with booth - one of Adam's first commissions while working for Anthony Nixon furniture

One to watch: Adam Howarth

19-year-old furniture maker Adam Howarth from Newcastle has been fascinated with furniture design and making since he was 14. and since then has been doing everything he can to learn more about the subject.

After finishing school, Adam started working for Anthony Nixon furniture, a local furniture making company located in the small town of Barnard Castle. He worked there as an apprentice for two and a half years, spending as much time in the workshop as possible, getting to work early and staying back late to practice the exciting, new techniques he was learning.

About six months ago, he decided to leave the company after being offered a job by a furniture maker called Nick James in Newcastle. This meant he could live with his girlfriend in the city and learn about the trade from a different perspective.

Adam makes a lot of his pieces in the small workshop at his parents' house including the large dining table (booth) pictured above, which



was one of his first projects at Anthony Nixon Furniture. The oil paint box opposite is made from reclaimed oak salvaged from the Bowes Museum. The wood came from a damaged end panel from a row of cabinets that was purchased from the 1867 Paris Exhibition: they were just throwing it away so Adam asked if he could have it.

In terms of the future. Adam plans to keep building on his existing skills and who knows, one day he may even be running his own furniture making business? Keep up the great work, Adam! See more of his work on his website: www. adamhowarthwood.co.uk.



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round



It must be the end of an era for woodworkers and engineers. With the news that Axminster have

finally stopped publishing their annual catalogue, some of us will have felt a slight twinge of sadness. Many woodworkers regularly sat down with a cup of tea and pored over its pages, mentally drawing up a wishlist of tools to lust after. For some, a new edition was essential bedtime reading - seriously! Thanks to Ian Styles and the team at Axminster for the mammoth task of compiling the compendium each year. I suspect I won't be alone in keeping last year's catalogue as a memento...

Phil Davy, Consultant Editor

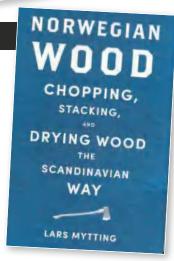
Book review

Norwegian Wood Chopping

Maybe it's that time of year, but several books have appeared recently aimed at the woodburning enthusiast. For woodworkers who regularly create a pile of offcuts, this method of heating makes good sense. But in some parts of the northern hemisphere, wood as a fuel is much more a way of life than simply cutting up a few old pallets to toss on the fire.

This hardback book was originally published in Norwegian and has become something of an international bestseller. In the author's words it's an account of his 'encounters with people who are passionate about wood'. In fact, on Radio 2 recently Lars Mytting described himself as a 'firewood nerd!'

This is a comprehensive handbook, from the pleasures of felling trees and chopping wood to stacking and seasoning logs, with a logstore-load of fascinating facts, advice and history squeezed into its pages. Chainsaws and axes are examined with almost a reverential air, not to mention the stoves and ovens which are a large part of the Scandinavian culture. There are loads of gorgeous photos, especially of mightily



impressive woodpiles. Some of the sculptural stacks featured are real works of art. Hardly surprisingly when you discover there's even a firewood stacking competition in Norway!

An entertaining read, it's an expensive book that will appeal to a wide audience. Who'd have thought firewood could be so fascinating!

Written by Lars Mytting Published by Maclehose Press

Price: £20

Web: www.maclehosepress.com

Q&A

Shapeshifters

I would like to have a go at making a stringed musical instrument, probably a ukulele initially. What sort of tools would you suggest for shaping the neck, which I understand is quite a tricky job?

V Taylor, via email

Several different hand tools are suitable for neck carving. A convex-base spokeshave is perhaps the most traditional item, though if you've never used one before these can be awkward to master and sharpen. Easier to use are rasps and files and you'll need a couple of grades. Recommended is the Japanese saw rasp, which is double-sided (coarse and fine) and fast. Another efficient



tool is the Microplane rasp, consisting of a stainless steel blade with incredibly sharp teeth. Blades are replaceable and can be reversed to cut on either the push or pull stroke. When you've roughed out the neck, remove coarser blade marks with a half round or flat carver's file or abrasive paper (about 150 grit) glued to a strip of hardwood. For more information, visit www.axminster.co.uk

House and Garden

Winter project

Takes: A weekend

TRY SOUARE





Give it a try!

If you're a fan of precision and accuracy, then why not have a go at making your own try square?

A large try square is a particularly handy tool when setting out large items of joinery or furniture.

For marking sheet materials the longer the square's blade the better, assuming this is accurate. I have an old Wolfcraft metal square that's a decent size, though it's not terribly reliable these days. Having been dropped a few times it's now slightly bent and only good enough for rough work. When working in a joinery decades ago, I remember that one or two of the old timers had their own hardwood squares (made of beech, I think) which they swore by for accuracy. These may have been made during apprenticeships or handed down from previous generations. I'd often considered making one, so when I needed to mark out some veneered plywood sheets recently it seemed the ideal opportunity.

This is a good way to use up suitable offcuts

as it doesn't really matter what hardwood you use. I used a piece of utile for the stock while the blade was ash, though I'd initially made this from sapele. Size is not too important either, though the longer you make the blade, the more awkward the tool becomes for smaller work. You can make it as decorative as you like, using contrasting timber for the stock and blade, or maybe inlaying pearl dots over shorter dowels. I used a length of 10mm walnut dowelling, which reinforces the bridle joint. If using figured timber, the only requirement is that this should be stable.

Make the blade about one-third the thickness of the stock. For easier cleaning up of the bridle joint, make the open mortise a fraction wider than your chisel. For a 6mm chisel, cut the mortise about 7mm wide. A planer/thicknesser will save you a lot of preparation work, though this is not essential.

Although you may think it's just the outer

edge of the blade that needs to be dead square to the stock (for marking out), the inner edge needs to be, too. If not for drawing lines, you'll need this inside reference edge to check ends of boards are square before working on them.

Don't forget to check both edges of the blade and stock with a steel straightedge before you glue them together. When the glue has dried you should check the square for accuracy. With the stock held tightly against the completely straight edge of a board, draw a pencil line down the length of the blade. Flip the tool over and draw a second line to coincide with the first. If the two lines don't match exactly, you'll need to true up the blade with a long bench plane. The inner edge is more difficult to trim, however. If you like to hang your tools from hooks in the workshop, drill a suitable size hole near the end of the blade.

M



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Prepare the material to finished size on a planer/thicknesser. Make sure the fence is square before surface planing



Mark the stock to length, allowing for the bridle joint. The blade of the square should be left overlength at this stage



Cut the timber to length, either on a mitre saw or by hand. Packing at the rear will prevent breakout when cross-cutting



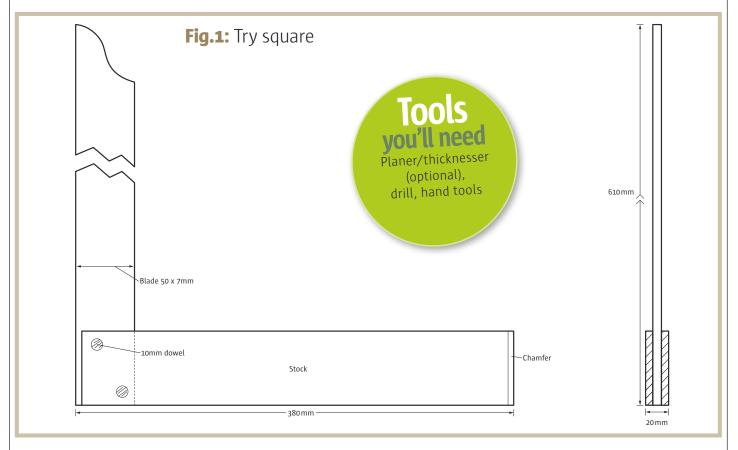
Then, trim the ends of the stock with a bench plane and shooting board if you've used a hand saw



Set a mortise gauge to the thickness of the blade material. Mark around one end of the stock



Carefully saw down the open mortise to the pencil line, keeping to the inside of both gauged lines



Winter project

Takes: A weekend



Remove the waste material from the stock with a coping saw. Alternatively, cut the mortise on a bandsaw



Chop back the bottom of the mortise with a 6mm chisel. Pare down the sides carefully with a wider blade



The blade component should be a snug fit in the stock. Check the joint for accuracy with an engineer's square



Mark the overall length of the blade, then draw around a suitable diameter tin to create a pleasing shape



Cramp the blade firmly, then cut out the curve with a coping saw, keeping on the waste side of the line



Clean up the curved end with a sanding drum mounted in a drill stand. Alternatively, use a rasp or file for shaping



Mark both ends of the stock with a sliding bevel, then create decorative chamfers with a block plane



Brush PVA adhesive on the joint and cramp together. Cramp an accurate square in position while the glue sets



Mark out the centres for 10mm diameter dowelling. Test for fit in scrap wood first, then drill right through the stock



Next, cut two lengths of dowelling over size. Apply glue and insert both pieces through the stock



After the glue has dried, saw off excess from the dowels on both sides. Trim flush with a block plane



After sanding with 180 grit abrasive paper, wipe on a couple of coats of finishing oil, such as Rustins

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Useful kit: Niwaki Japanese saws

A saw for all reasons

Japanese saws are so different from their Western counterparts, both visually and in the way they cut (on the pullstroke). As I mentioned back in GW295, Niwaki is a small company bringing specialist Oriental products into Britain. With a solid reputation for garden and kitchen equipment, their range of traditional woodworking hand tools is gradually increasing. Here I'll have a look at two of their saws: these are fairly typical of what Niwaki offer.

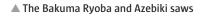
This general purpose double-edged saw would be a good way to dip a toe into the world of Japanese tools without spending a fortune. One edge has finer teeth for cross-cutting. while the opposite row is designed for ripping. This saw is particularly good for cutting tenons and bridle joints. Start a cut along the line with fine teeth, then flip the tool over to continue



▲ One edge on the Bakuma Ryoba saw has finer teeth, whereas the other has bigger teeth



▲ The 250mm blade is detachable by lifting a lever at the end of the handle



ripping down the grain with the reverse edge. With an overall length of 585mm, the 250mm blade is detachable by lifting a lever at the end of the handle. A hook at the end of the blade locks into the steel tang in the handle when you reset the lever. Be mindful of the sharp teeth when you do this! Hardened teeth mean they cannot be resharpened, so swapping the blade is the only option when tips become dull.

The handle is wrapped entirely in bamboo, providing a decent grip. Very fine cuts can be achieved with the cross-cut teeth, while the rip



▲ The Ryoba saw is good for cutting tenons and bridle joints



▲ Both edges have a convex curve, which makes them ideal for starting a cut in the middle of a panel

teeth are graduated in size from one end to the other, so it's possible to vary the cutting rate. No blade guards are supplied, but plastic slide binders will do the job cheaply.

The smaller Azebiki saw is similar to the Ryoba in that it has two rows of teeth. Both edges have a convex curve, making them particularly useful for starting a cut in the middle of a panel. The finer teeth are also ideal for sawing dowels flush or cutting smaller dimension timber. The blade is about 75mm long, and with its extended reach you can get into confined spaces that would be tricky to access with a conventional back saw. Overall length is 390mm and the blade is fixed into the handle and cannot be removed. I'd be tempted to keep this lightweight tool for more delicate work as a result, rather than use it every day. It cuts well enough, the curved edges making it easier to use than they would appear.

Conclusion

I'd say the Ryoba saw is the more useful of the pair as it can be used for relatively large joints as well as finer work. The Azebiki is a more specialised tool, though performed equally well. GW

Prices: Bakuma Ryoba – £32; Azebiki – £32

Made in: Japan Web: www.niwaki.com



▲ The finer teeth are also ideal for sawing dowels flush or cutting smaller dimension timber

Useful kit: Axminster 75mm swivel head vice & Axminster dovetail marker

great little

Although a hefty bench vice is almost essential for most areas of woodwork. sometimes you need something specifically for that smaller metalwork, soldering or modelmaking task. This sturdy little engineer's vice from Axminster is definitely versatile. Not only is it portable, but you can rotate it through 360°. Made from cast-iron, it's no lightweight, either.

A lower tommy bar enables you to attach the vice temporarily to a worktop up to 47mm-thick. Alternatively, you can screw or bolt the base more permanently, with both dual horizontal and vertical fixing holes offered.

Jaws are tapered and 75mm wide, with an opening capacity also at about 75mm, though reckon on 70mm maximum for a reliable grip. Inner jaw faces are smooth, so any workpiece is less likely to get marked, though the grip will not be quite as tight as textured facings provide. Two parallel bars (either side of the screw thread) ensure a consistent winding action. The front tommy bar is 90mm long and

A lower tommy bar enables you to attach the vice temporarily to a worktop up to 47mm-thick

is certainly tough enough for the job. Beneath the jaws are shaped grips for securing circular stock up to 30mm diameter. A flat area behind the rear jaw can be used as a small anvil, handy for small-scale work.

A third, shorter tommy bar controls the swivel action. Release this and you can rotate the vice to any position, simply locking it again by tightening the bar. Simple and effective. This vice may not be the most beautifully finished workshop tool, but at this price does it really matter? Excellent value.

**** **Price:** £23.95

Web: www.axminster.co.uk



▲ A third, shorter tommy bar controls the swivel action on the vice



Neat little gadget

Whether you cut dovetails by hand frequently or only rarely, a specific marker is a handy tool. It means you don't need to bother about setting a sliding bevel each time you set out a joint. This little device is compact and won't take up much space in the toolbox. Made from anodised aluminium, it has a matt black finish with white etched graduations (1/32 in increments) along each slope. I've never seen graduations on a dovetail marker before, though I guess some woodworkers will find them useful.

Like most markers, twin blades provide a choice of angles for your dovetails: 1:5 for softwoods and 1:8 for hardwoods. Underneath, engineer's corners mean the stock will still sit tightly against the timber even if there's a slight whisker remaining along the edge. On the downside, the stock is a bit short (just 23mm), so it can rock slightly when holding it to mark the outer dovetail slopes on a board. Apart from that, this is a neat gadget for under a fiver. GW

**** **Price:** £4.96

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These are a few of my favourite things



Taking a sabbatical from his regular projects, **Les Thorne** reflects on the areas of turning that he enjoys the most, including tools, techniques and teaching others

hen I am doing demonstrations and while teaching, I often get asked what tools and techniques I rely on as well as the areas of turning that I enjoy the most. Many of you who I've met over the last couple of years will know that I have had to take a sabbatical away from turning due to a back operation, so I thought this would be a great opportunity to go through my photo archives and produce an article from them. As you go through your turning life, you end up relying on certain tools, methods and if you turn a lot, you may end up with a signature piece of work. My turning takes me from small work, such as lace bobbins, to large-scale architectural columns and

mouldings; this is probably why I have built up a large collection of equipment to be able to cope with everything that my customers throw at me. To a lot of you, especially the flat woodworkers, you have a lathe tucked away in the corner, which comes out just for the odd spindle or knob. I try to get my students to find a direction in which they want to go; it may be bowl or box turning, or something a little artistic with some colour and texture, which will help them develop to become a better turner.

I have been renting a workshop for over 14 years now; this gives me the ability to teach groups of turners. Each person gets to use a quality lathe and has access to all of my tools.

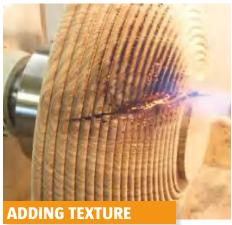
Les' favourite things



Teaching children is hugely satisfying. Young Harry here did have to stand on a duck board to get him to a safe working height at the lathe. Youngsters do have an annoying habit of picking up techniques very quickly!



Personal protection is an absolute must while at the lathe. An air-powered respirator is always my first choice of headgear as well as steel toe cap boots. Everything has to be comfortable to ensure you are inclined to wear it



Using a blow torch as a form of texturing and colouring is not a new thing but it is great fun. I often like to accentuate faults in the timber rather than trying to hide them



When I first set up my workshop, I had fixed lights but found they were never in the right place. I have Anglepoise lamps attached to standard lamp bases so they can easily be moved into the perfect position



When I go abroad to work it's always nice to take my own tools with me. Having some collet handles will help to keep the weight down and also, it's often easier to sharpen the tool without the handle attached



I once heard a turner say "he who dies with the most tools wins." I think I'm doing a pretty good job at the moment. A lot of these tools are just variations on a theme, but they do look good on the wall



Turning wet wood is one of the things I love: it's generally free or at little cost and cuts easier with very little dust. If you want to turn the bowl to a finish, you will need to turn it thin; that should allow the timber to move without cracking



The progression from turning wet wood into working burrs is a natural one. Although expensive to buy, this piece of oak shows the amazing pieces that can be achieved



This is one of the things that motivates me when in production mode. Packing and wrapping them all up before they go to the customer and seeing them all look pretty much the same is very satisfying

Turning



I try to get all my students to make boxes. You need very little timber but the diversity of styles makes them a great, interesting project like these small ones with my harlequin colour and texture



The beaded and burnt bowl is something that I started making many years ago. It has evolved slightly over the years – for example, I now take the beads inside the bowl as you can see here



Experimentation with shapes is an important part of your journey. Light pulls and bottle stoppers offer a lot of practice with very little timber used. This is the jig I use to spray the pulls - just some masonry nails in a board



Learning how to hand-chase threads is not easy but there are some great devices out there, which will make the job much easier. A threaded lid adds something a little special to a box or a turned vessel



A drill chuck is one of the most important things for the workshop; it can be used in the tailstock with the wood in a chuck. Make sure that you turn the speed of the lathe down



I have the ability to be able to turn large diameter projects that do sometimes need sanding with an angle grinder; this allows me to sand much larger surface areas quickly, although it does produce a lot of dust



Draw filing your toolrest will make the tool run easily along it. Pull the file backwards and forwards and then finish it off with some 240 grit wet and dry



Having access to a spray booth helps me in my commercial work. If I only have a few things to spray, I will often do it with the aerosol-style lacquers in the workshop



I have a cupboard full of finishes but I would say I only use about three types: wax, oil and lacquer. I do have a lot of stains, mostly spirit-based, but I do use water-based ones on certain timbers as I find they work better

Les' favourite things



I was introduced to buffing work about 15 years ago. You will get amazing surfaces if the wood is prepared well and then buffed properly; the secret is to not let the wheel touch an upwards edge of the work as this will pull it out of your hands



Homemade screw chucks allow you to use a screw that suits the project, whether it be to turn door knobs, thin bases or wooden fruit. as this one is made for. I like to use a dense timber, such as purpleheart or boxwood



Bicycle spokes are an interesting addition to the workshop. They are great for holding work when spraying - anything with a small hole such as this apple and pear are easily supported



I doubt that woodturning would have become such a growing hobby without the development of the grinding jig. Learning to hand sharpen is not easy, especially for the occasional turner



The long grind on shaping gouges allows the tool to do pull as well as push cuts. You can see the quality of the grind that a CBN wheel affords you



I love texturing my work. You can have great creative fun with some simple burrs in a mini drill; they can be used for carving, piercing or just scratching the surface



A coring system or bowl-saving device will save you lots of money if you start turning large or expensive blanks. They are not cheap but the ability to get more than one bowl from each blank will pay for itself eventually



Having the lathe at the correct height is a necessity to comfortable turning. This photo shows that the lathe is on the height of my elbow - about 1,193mm from the floor to the centreline



Vernier callipers are my first choice for accurate measuring; standard bow leg ones will give you a false reading as the legs can move. If you round over the corners, however, they will not grab the wood

Turning



I am often asked why I go to the trouble of burning lines in the handles that I make for my range of tools: it's because I still find it great fun to hold a wire against the spinning wood and burn a line



Turning long, thin wood is not easy as it will become very springy as it's so thin. This is the steady that I use to get over this: using roller skate wheels means that there is no marking of the timber



When I turn really large diameter pieces like this moulding, I need to put them on the outboard side of the lathe. The freestanding toolrest from Jet allows me to turn large pieces very easily



MDF is a major player in my turning life. Keep away from the cheap ones and use a moisture resistant one; these are normally green in colour. The denseness of the board makes it ideal for turning jam chucks



If I don't get a working drawing from my customer, I have to research the correct shape for a piece. In architectural work that means going to the bible of shapes, *Classic Forms* by Stuart Dyas



Turners have often used ceramics for inspiration and the piece shown here is an example of work that could easily cross from clay to timber. This is a piece that I intend to make in a future article

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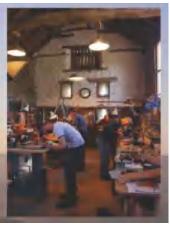
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Michael's musings





Before tidy-up...

...and after

Workshop turnout

With spring almost upon us, **Michael Huntley** sees this as the opportunity for a good old workshop sort out, which was definitely long overdue!

Well it had to happen. As somebody once said: "It's a workshop, not a store." There are major turning points in the life of a workshop and spring is one of them, arrival of a new machine is one and delivery of a client's job is another. Most of these are positive. Being unable to move because timber is everywhere is less positive. I actually found a board that I know I've had since 1970 today! It was softwood; it was going to be a shelf somewhere or other. It has to go: I have been asked to make some window-boxes and it will get used for the back of one of those. There is just no point in keeping all these leftover boards, especially softwood. I had a friend who had a system for workshop turnouts: he left the house and his wife and daughter did the turnout. No tools were thrown away, just all the odd bits and pieces that "might come in

handy" one day. It worked; he was one of the most productive people I knew, always busy and always had a clear bench. Having said that, another one of the best craftsmen I knew always had a bench with tools spilling everywhere on it, so it takes all sorts.

Decluttering

The reason for my turnout, apart from it being spring, is that I can no longer reach the shelves on the walls because of the timber stacked against them. I cannot open the emergency exit because of the timber in front of it. The truth is, each job must pay for its own materials and valuable hardwood offcuts must have their own dedicated store. Any offcuts shorter than 2ft, unless they are of really rare timber, should get given away or burnt on the stove.

Another problem is that my workshop is the processing plant for the unwanted wood from the local building site! I collect anything they don't want (or they have to pay to have it taken away), take out the good stuff for students to do practice joints on, and burn the rest on the Rayburn, which supplies our cooking and hot water. When there is a skip-full to process the workshop does get a bit crowded, but in the '60s when I started, timber was scarce and we recycled everything (formative hours as a teenager spent de-nailing and de-screwing stood me in good stead for later life!).

Once I can see the back wall again, I will also be able to get to the lathe and perhaps a few of those three-legged stools promised to the under-fives in the family will get made before they grow too big to use them!

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